THE MAGAZINE OF

Standards

The Perkin Centennial (page 204)

July 1956

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In This Issue

Features

Company Member Conference Spring Meeting Features Workshops . . 197

The Perkin Centennial 204

Standardization by Punch-Card Methods. By A. H. King 208

Council Plans New Program on Nuclear Energy 216

News

News Briefs 219

What's New on American Standard Projects 222

Departments

From Other Countries 217

American Standards Under Way. Status as of June 29 220

Standards Outlook. By Leo B. Moore 223

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Marginal Notes

An International Celebration and Textile Standards—

As this issue goes to press, meetings now being held in Europe are helping to bring about better international understanding in many fields.

Closely related to the use of synthetic dyes celebrated in the Perkin Centennial (page 204) were meetings of ISO Technical Committee 38 on Textiles at Southport, England, May 11-18. Many of those who are taking part in the centennial celebration were United States delegates to these textile meetings. Subcommittees on colorfastness and shrinkage are meeting in New York in September, just before the Centennial.

Of the work done by TC 38, W. D. Appel, leader of the USA delegation, says: "Sensing the urgent need for internationally accepted instrumental tests [tests using instruments] for cotton fibers, the American cotton industry took the lead in urging prompt action. An outstanding group of cotton fiber technologists served as members of the American delegation of 17 members. Working intensively with able delegates from the 19 other countries represented at the meetings, three key cotton fiber test methods were agreed upon and presented to the Technical Committee. The committee, in turn, accepted the methods as 'proposed ISO Recommendations.' Work was started on a number of other cotton fiber test methods."

The progress was possible, Mr Appel declares, "through a general recognition that ISO will best serve international technology and trade in textiles if it establishes practice standard test methods promptly and then improves these methods as rapidly as experience and advances in textile science permit. This is being done in TC 38."

"A second accomplishment," Mr Appel reported, "was the unanimous acceptance of a single, universal system of expressing the 'number' or weight-length relations of all kinds of fibers, yarns, and

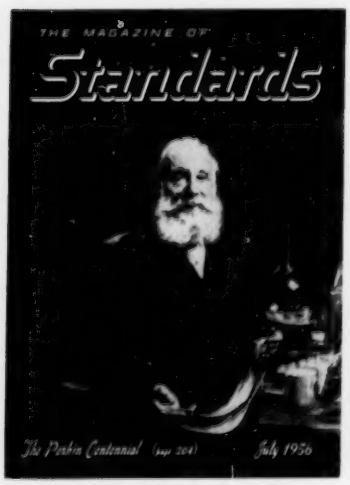
cordage [see news item, page 219]. The recognition of this system by all branches of the textile industry and gradual introduction of it in place of the many systems now used cannot help but be of far-reaching value to the industry and its customers."

A Fiftieth Anniversary —

Another anniversary being celebrated this year is the adoption of the Pure Food and Drug Act in 1906. This was an important milestone in the application of standards for the protection of the public. Although in this case, the standards were made mandatory through legislation, all concerned with the use of standards must consider this to be an event of outstanding importance in the field of standardization.

In the Next Issue—

Any one interested in gearing will be glad to hear that an article by Louis D. Martin on fine-pitch gears is the special feature in the August issue. The article is timely since it appears in the same issue with announcement of new editions of the American Standards for this type of gear.



The Front Cover—

William Henry Perkin in his laboratory. Perkin discovered the first synthetic dye—mauve—in 1856 while attempting to synthesize quinine, using aniline as one of the raw materials. For plans of the Perkin Centennial, see page 204.

This Month's Standards Personality

WILLIAM D. APPEL, more than any other single individual, has been leader in the international development of standard test methods for textiles. He has just returned from meetings of the International Organization for Standardization's Technical Committee 38 on Textiles where accomplishments were, in his own words, "most gratifying." "The 'getting started' period is over," he says, "and rapid, effective standardization of textile test methods can be achieved."

Mr Appel is chief of the Textiles Section of the National Bureau of Standards and assistant chief of the Bureau's Division of Organic and Fibrous Materials. He joined the Bureau staff in 1922, after five years experience as a chemist in the dyestuff industry. He is author of many technical papers on dyes, textiles, textile testing, and colorfastness.

It is appropriate to honor Mr Appel in this issue which features The Perkin Centennial, since the work done by Mr Appel is effectively contributing to the application of synthetic dyes in a wide range of materials and products throughout the world. When he received the Department of Commerce Exceptional Service Award in 1953, the Department's announcement said: "His pioneering work in the utilization of spectrophotometry in the investigation of dyes and dyeing led to a new approach to the problems of dyeing and fading of textiles and anticipated technological developments in textile dyeing."

Mr Appel is chairman of ASA Committee L23 which is the United States committee for international work on textiles. He served on American delegations to meetings in England in 1948, 1951, 1954, and 1956, and was leader of the delegations in 1951 and 1956.

Mr Appel also has been chairman of Committee D-13 on Textile Materials of the American Society for Testing Materials from 1950 until this June.

His service to textile technology has brought him many honors. In 1954, the American Association of Textile Chemists and Colorists presented to him its highest award, the Olney Medal. He had served as president of the Association in 1944-46. He has been Life Member and Fellow of the Textile Research Institute since 1949; Overseas Fellow of the Society of Dyers and Colourists since 1950; and was awarded the honorary degree of Master of Science and title of Honorary Professor by Lowell Technological Institute in 1952.

Mr Appel married Harriet Fleisher in 1918. They have two sons and one daughter, all married, and 10 grandchildren.

When he has spare time, he enjoys bird study, gardening, mountaineering, and color photography. Extending his service to other fields than textiles, he served as Scoutmaster of a Troop of Boy Scouts for 10 years. For his services in this field, he received the Silver Beaver Award.

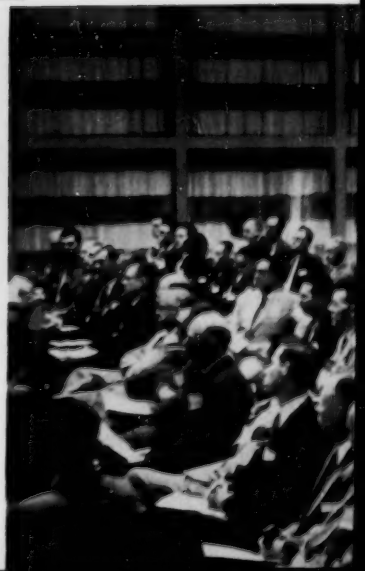
Company Member Conference

MEMBERS REGISTERING *for CMC's Spring Meeting at Cleveland's Manger Hotel (above) were welcomed by ASA Vice-President Van H. Leichliter, U.S. Steel, (right, seated) and CMC Chairman J. R. Walgren, Aluminum Company of America, (standing).*

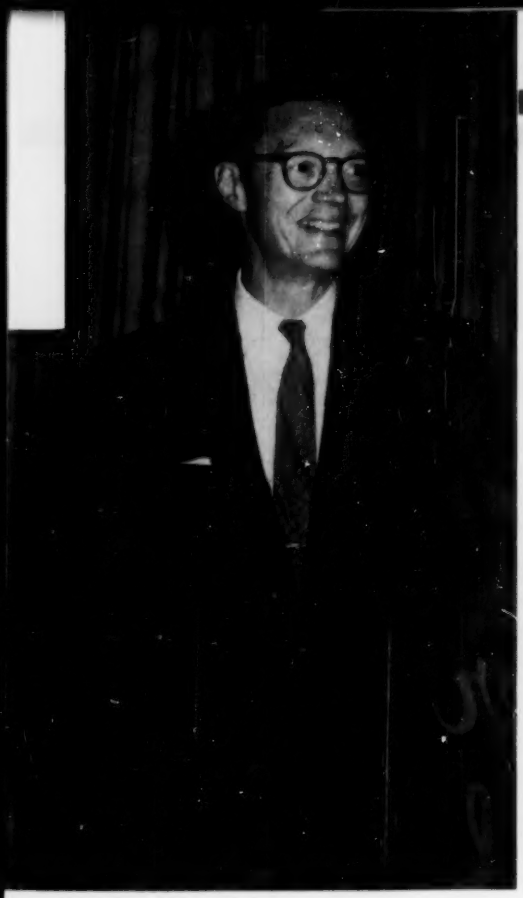
Spring

features

AS A FINAL EVENT, *members had an opportunity to tour one of three plants — the Engine and Foundry Divi-*



EXCHANGING NOTES *with other members (left to right)—J. C. Pierce and John S. Grant, Ingersoll-Rand; H. E. Bender, Clark Bros. Co.; F. H. Bump, Norton Co.; H. S. Riddle, Columbia Gas Systems; W. B. Fleming and Herbert F. Hackbarth, Jeffrey Mfg. Co.*



meeting workshops

sion of the Ford Motor Company; the Lewis Flight Propulsion Laboratory, National Advisory Committee for Aeronautics; or the U.S. Air Force Heavy Plant operated by the Aluminum Company of America. Left, at the Lewis Flight Propulsion Laboratory.

EXECUTIVES can help relieve the shortage of technical manpower by promoting the use of national and company standards, said J. R. Walgren, Aluminum Company of America, at the Spring meeting of the Company Member Conference May 14 and 15. Mr Walgren is chairman of CMC. He presided at the two-day meeting held at the Manger Hotel, Cleveland. Engineering executives representing a cross section of industry attended the meeting.

"Many engineers in industry today are wasting time and money," Mr Walgren said. "They are wasting time in solving problems which have already been solved by national standards. They are wasting money by creating their own special solutions—specials cost more than standards."

"In contrast to the special solution, standardization is the organized solution and recording of common problems, and is usually carried on by a group of experts," he said.

In opening the meeting, Van H. Leichliter, Vice-President, Operations, American Steel and Wire Division, United States Steel Corporation, appealed for support of standardization and ASA. Mr Leichliter is vice-president of the American Standards Association.

"We seem to expect standards to fall like water out of the faucet or appear like electricity at the turn of the switch," Mr Leichliter said. "But the history of ASA shows it takes a great deal of work on the part of companies that have a common interest in an important way of life—standardization."

"When we consider the hazards that can occur from the use of atomic energy by industry," he said, "we realize how important it is going to be to have national standards for its safe application, and how important the work of the Planning Committee recently organized by the American Standards Association will be to industry in the future. We must acquaint our bosses and our companies, and the general public, with the value of standardization and ASA."

Because those present were executives actively engaged in administering standards programs in their companies, the meeting was devoted to workshops to discuss specific company problems and how to solve them through the use of standards. Leaders were Roy P. Trowbridge, General Motors Corporation, Detroit; E. Philip Kron, Eastman Kodak Company, Rochester, N. Y.; F. O. Smeltz, Allis Chalmers Manufacturing Company, Milwaukee, Wisconsin; J. R. Welshman, Grinnell Company, Providence, R. I.; and S. H. Watson, Radio Corporation of America, Camden, N. J.

A. H. King, International Business Machines, Poughkeepsie, N. Y., described how IBM has set up its coded parts system and a system of evaluation of standardization by punch card methods (see page 208).

H. C. Erdman, National Screw and Manufacturing Company, and P. C. Haar, Warner and Swasey Company, were in charge of local arrangements.

Following is a summary of the workshop sessions.

Panel on "What Makes Standards Tick." Left to right, W. C. Stewart; R. E. Savage; Van H. Leichliter (speaking); J. R. Walgren; R. P. Trowbridge; George Pascoe.

What Makes Standards Tick?

R. P. TROWBRIDGE, *Assistant Standards Engineer, General Motors Corporation, Detroit, leader of panel.*

Members of the panel were W. C. Stewart, technical advisor, Industrial Fasteners Institute, Cleveland, Ohio; R. E. Savage, Metallurgist, International Nickel Company, New York; and George Pascoe, manager of design and standards, Ford Motor Company, Dearborn.

A company standards department should be a two-way street, the chairman declared. It should bring in information available from outside standardizing bodies for the use of the company, and it should also participate in outside activities.

Mr Trowbridge himself first became interested in surface finish standards in 1947. He is now responsible for standards contained in three of the General Motors volumes of engineering standards. These are standards concerning bolts, rivets, nuts, drafting design standards, and screw threads.

The fastener industry converts about 1½ million tons of metal into fasteners per year, Mr Stewart said. The Institute has a Standards Committee made up of 15 or 20 members. The industry's most important standardization work has been in the sectional committees of the American Standards Association concerned with bolts, nuts, and rivets. Its primary problem is with conventional fasteners such as the average bolts and nuts. Approximately 35 percent of the industry's product is made in advance, and stocked and sold over the counter. As a result it is important to have standards. Some research may be needed before a standard can be developed in cases where products are special at the present time, he said, and mentioned the development of high-strength bolts which are now being used in many cases instead of rivets, as well as research now going forward on torquing of bolts.

As a metallurgist, Mr Savage has been very much interested in the new material called nodular iron or ductile iron. Commercial production started in 1949 and this new metal is now being used for a wide variety of purposes. Because it is a new type of material, none of the existing specifications for materials can be used for it. Specifications are badly needed in a hurry, he said. However, because of the wide variety of uses to which nodular iron is put, the writing of specifications is difficult. Some work is going on now and committees of the American Society for Testing Materials have already developed a few specifications on a performance basis.

Three things make standards tick, Mr Savage commented: Days, and even years, of work by committees; patience in getting the producer and user to come to agreement on the most acceptable specifications; and cooperation in writing the specifications in the best possible way.

Standardization is considered an essential factor in modern mass production at the Ford Motor Company, Mr Pascoe told the meeting. His own responsibility is in manufacturing standards, particularly tool standards. Due to decentralization of the company's operations, engineers had had a tendency to design tools as specials, simply because they did not have information concerning the standard tools already available. In the Rouge area alone the company had been spending approximately 5 million dollars per year on this class of tooling. By applying standardization to this problem, they were able to realize the inherent advantages associated with standardization—over-all economy, minimum inventory, optimum performance, availability of materials, tools, and equipment, minimum maintenance, reduction in design time, and reduction in time required for purchasing negotiation.

Ford now has four main standards committees, with representation from all divisions of the company. These committees are on materials and processes; tools; industrial equipment; and methods and specifications. This works well because it makes use of the best experience in the company.

Standards have been established in the fields of cutting tools, dies, fixtures, gages, abrasives, conveyors, industrial process equipment, electrical, hydraulic, pneumatic, and lubrication standards, automation, welding, hand tools, drafting, materials handling, and materials and processes. Ford Standards Books are distributed to all activities concerned through an organized distribution system. These books are also made available to Ford suppliers under an established subscription policy. At present, approximately 9,000 copies are being used.

The standardization process is somewhat like a pyramid, Mr Trowbridge commented, in summing up the presentation. Each company has certain company standards of its own. Some companies get together in trade associations and technical societies on an industry basis. Then there are national standards, such as those approved by the American Standards Association; and finally there are international standards, such as those brought about through American-British-Canadian agreement and through the work of the International Organization for Standardization.

Discussion—

One of the important features of this session was the participation of those present in the audience. Many interesting questions were asked and additional experiences presented by delegates speaking from the floor.

Questions brought out a statement by Mr Stewart that the Unified Screw Thread standard is now being used 100 percent. All of the bolt and nut companies are making their products using the unified screw thread unless the customer demands the older type thread, he said.

In answer to a question on how much authority a central standards group should keep when a company is divisionalized, it was suggested that responsibility for standardization in each division should be in the hands of the men in the divisions, but that each division should be represented on a central committee in order to obtain agreement among the divisions.

On how to publicize the advantages of standards there were a number of suggestions:

(1) To make a real effort to let the designers, engineers, and purchasing men know about the availability of standards since most of them would be willing to use the standards if they knew of their existence.

(2) To find one good standard, make a detailed study of the savings resulting from its use, and publicize this one case. In one individual instance, savings on a standard had more than paid for the whole cost of the standards program for the year, it was reported.

Evaluating a Standards Program—left to right, C. J. Lawson; C. W. Straitor, Jr; E. Philip Kron; Clarence Matthewson; and secretary.

Evaluation of a Company Standards Program.

E. PHILIP KRON, *Eastman Kodak Company, Rochester, leader of workshop.*

Members of the panel were C. J. Lawson, Director of Standards, International Business Machines, New York; C. W. Straitor, Jr, Standards Engineer, The Detroit Edison Company, Detroit, Michigan; and Clarence Matthewson, Aeronautical Division, Minneapolis - Honeywell Regulator Company, Minneapolis, Minnesota.

Mr Lawson—IBM analyzes its standardization program by a punch card method explained in the paper presented by Mr King (page 208). IBM's activity is devoted primarily to the parts and components of its various machines. The company has not developed a system for measuring the effectiveness of standards in other phases of standardization activity, such as design and procedures. Mr Lawson believes that it is possible to hang a dollar sign on standards, and that any program as broad in its application as standardization cannot be operated without knowing where you have been, where you are going, and how much it will cost.

Since the coded parts activity report has been in operation, IBM has been successful in elimination of duplicate parts and use of standardized new parts. The report indicates activity of both standard and nonstandard parts and permits an analysis of those standards which are not being used. This is a new program which has only been in effect for a short time, but has already indicated great possibilities for evaluating the standards program in specific terms.

Mr Straitor—A system used by the Detroit Edison Company for evaluating the standards program applies only to materials and equipment. Detroit Edison uses a case study method which gives examples of savings through standardization. It also prepares a report on the activity of the Standards Committee for management to review. Some of the examples are given on page 200. The committee completed an extensive study of spare parts which were stocked, and found it possible to make considerable savings by publishing a material supply catalog of spare parts.

Mr Matthewson — Minneapolis-Honeywell evaluates its program by two methods:

1. A five-point verified cost-reduction system which deals directly with tangible savings.
   (*a*) Submission (by department with idea)
   (*b*) Investigation (by most logical department)
   (*c*) Verification (by the Time Study Department)
   (*d*) Implementation (by most logical department)
   (*e*) Accomplishment (by the Time Study Department)

2. A report based on faith that the standards program is effective.

He estimated that every dollar invested in standardization saved approximately $11, and he thought that approximately $500,000 a year was being saved as a result of the standardization program in the division which he represented. The reduction in engineering decisions and the educational value of a standardization program is evaluated in

general terms. Minneapolis-Honeywell classifies standard items as "repetitive and desirable." As usage develops, material is stocked.

Discussion—

After the preliminary remarks, a discussion took place as outlined below.

1. *Scope of the Standardization Program*—Mr Kron described a punched card method which Eastman Kodak Company is developing at Kodak Park to analyze purchase orders. This system involves a summary by three broad classifications: (1) line purchase items, (2) dollars, and (3) quantity items. In each of these classifications the purchases are analyzed to find out what percentage are (1) standard, (2) nonstandard but standardizable, and (3) nonstandard and not capable of standardization. From this summary it is expected that it will be possible to determine exactly which items should be considered for further standardization and how effective the present standards are.

It was pointed out that definitions are important in determining any system. Commercial standards and specification materials may provide the same economies as standards listed in a company's own particular catalog. NEMA motors were indicated as being an example of this type of item.

2. *Program Objectives*—It was generally agreed that the objectives listed in the outline (see list page 200) were as complete a list as possible and provided both tangible and intangible savings. Mr Mohlman of Bell and Howell emphasized that a company does not always benefit by reducing inventories; sometimes savings can be realized by actually carrying a larger inventory of fewer items.

3. *Effectiveness of the Program*—There was considerable discussion regarding whether or not all standard items should be stocked. Mr Fleming of Jeffrey Manufacturing indicated that they list only items which are stocked in their standards catalog. Both Minneapolis-Honeywell Regulator Company and Eastman Kodak Company list items in their standards catalogs which are not stocked but are available as commercial standard items and can be obtained off-the-shelf. This also brought about a discussion of nonstandard items which are sometimes stocked. Eastman Kodak Company recently published such items on blue sheets and included them in the material standards catalog. This company is now embarked on a program to eliminate the blue sheet items either by standardizing them if a real need exists, or by disposing of them as obsolete or surplus items and eliminating the stock authorization if they are not really needed or if a standard item can be substituted. Detroit Edison Company has a similar plan, using yellow sheets. Many of their items were obtained during the war and stocked for emergency reasons. S. H. Watson of RCA pointed out that when a large volume of material is required it may be more logical to choose a nonstandard item. Small volume may make the use of a nonstandard item more expensive.

4. *Methods of Evaluating the Program*—Each of the various methods in the outline were discussed: no others were developed as a result of the discussion. Mr Ashkinazy of Sperry Company stated that they work from drawing review in their engineering standards department. They assign a code number to all materials used or components. The Standards Department creates general use drawings; before these drawings are made there is considerable discussion to arrive at a final agreement on the design. If complete agreement is impossible, the product engineer's decision stands. He emphasized that the time to determine the use of a standard item is at the design stage, when an idea is first conceived. Code numbers are assigned by the Standards Department so that they have an opportunity to review the use of standard materials at the very beginning.

In the General Electric Company the Standards Group tries to educate G-E people by developing case histories to show dollar savings and also to emphasize inventory control

Evaluating the Standards Program

(Outline for discussion at CMC spring meeting)

I. Scope of the Standardization Program

A. Purchased Materials, Services, and Equipment
  1. *Buyer's Standards*
  2. *Commercial Standards*
    (a) American Standards (ASA)
    (b) Trade Association
    (c) Technical Society
    (d) Manufacturer
  3. *Specification Materials*
    (a) Castings
    (b) Coal
  4. *Nonstandard but Standardizable*
  5. *Nonstandard,Nonstandardizable*

B. Engineering Standards

C. Product Standards

D. Manufacturing Standards

II. Program Objectives

A. Inventory Reduction
  1. *Simplification—reduction in items*
  2. *Lower value*
  3. *Return on investment*

B. Cost Reduction and Value Analysis

C. Engineering Effort

D. Training Methods

E. Production Increase

III. Effectiveness of the Program

A. Condition of Published Standards
  1. *Current*
  2. *Complete*
  3. *Dynamic*

B. Use of Standards
  1. *Controls*
  2. *Effectiveness*

C. Type of Measurement
  1. *Questionnaire*
  2. *Request for copies*
    (a) Vendor
    (b) Intra-plant—charged or free

IV. Methods of Evaluating the Program

A. Impression

B. Spot checks

C. Drawing review

D. Statistical sampling

E. Tabulating Machine Analysis

F. Dollar Estimating

G. Questionnaire

H. Records

I. Purchase Order Analysis

V. Reports to Management

A. Form

B. Frequency

C. Management level

VI. Co-ordination

A. Purchasing

B. Standards Engineering

C. Product Engineering

D. Industrial Engineering

E. Plant Engineering

VII. Case Studies

advantages. The DuPont Company uses a questionnaire method.

5. *Reports to Management*—Practically all companies represented indicated that they submit some kind of a report to management; most of them on a yearly basis indicating the type of activity taking place in the Standards Department. Most of these were on the basis of intangible savings with some case histories included.

6. *Co-ordination* — It was pretty well agreed that all standards activity involves close co-ordination of the various divisions indicated, including such additional groups as Stores and Manufacturing.

7. *Case Studies* — The following case studies are from Minneapolis-Honeywell:

Design and Production Standard. Standardization reduced thread chasing problems and made possible a verified annual saving of $17,274 in direct labor and $1,800 in reduced tool costs. Other benefits are:

(*a*) 500 percent more tool life
(*b*) less scrap
(*c*) fewer engineering decisions
(*d*) less inventories.

The project includes adopting a Design Standard that is compatible with production capabilities, publishing an Operator's Instruction Manual, and specifying and procuring improved tooling.

Material Standard. Standardization of leadwires resulted in a verified annual saving of over $10,000. Some of the factors that permitted this saving are:

(*a*) Fewer different materials, sizes, and colors allow quantity purchasing with savings as high as 25 percent on material cost.

(*b*) Standardization of lengths, insulation stripping, and types of tinning reduced setup time on cutting machines approximately 25 percent.

(*c*) Simplified identification eliminated coding and decoding of leadwires which in the past had required more than 600 engineering manhours per year.

(*d*) Procedure for ordering and cutting reduced scrap 75 percent.

Commercial Tooling Standard. Standardizing the hand tools in the Burring Departments resulted in a verified annual saving of $5,196.88. This was made possible by:

(*a*) Reduced tool inventories—It was determined that only 13 percent of the different files stocked and used in the Burring Departments were needed. Out of the 143 different files stocked, only 18 were standardized. This inventory reduction was typical of all burring tools.

(*b*) Standard tool numbers are positive identifications. They assure that the proper tool will be used, which in turn means better workmanship at less cost.

The following case histories were given by the Detroit Edison Company:

Self-Sticking Identification Markers. They purchased a new type of terminal block to replace one that could be no longer purchased except as a special. The accepted practice was to stencil markings on the obsolete terminal blocks and to tag the wires individually with aluminum tags. It was proposed that self-sticking identification markers be used as standard on the new blocks and wires except in wet locations. Two departments reported satisfactory use of the markers in other applications for over six years. An annual saving of approximately $13,000 resulted from this standard.

Ball and Roller Bearings. Ball and roller bearings, as well as other bearings, are purchased and stocked as spare parts and maintenance items. Previous to 1950 the bearings were listed with associated equipment in the spare parts catalog. A description was often very brief—the manufacturer's name and the catalog number. As many as four users would stock the same bearing and keep it in a private stock. The bearings were reclassified to a common class, and an adequate ordering description was prepared for each one. Stocks were consolidated and new normals were established. Several thousand dollars were saved by reducing the number of types of bearings and the quantity of stock items. Two years ago another study showed that 25 percent of the bearings in stock could be purchased directly from the vendor's shelves. It was found that the vendor could deliver the bearings almost as quickly as the warehouse. Inventory was reduced and an annual saving of 15 to 20 percent of the cost of the bearings resulted.

IBM offered the following case histories:

On paper tape punches there are 127 different parts on five models; seventy parts have been made obsolete with an estimated saving of $70,000 in 1956, which will be repeated each year. On insulated wire a saving of $150,000 annually was estimated on 107 parts which were obsoleted.

Conclusion

The general conclusion of the workshop is that no one appears to have developed a good system for evaluating the standards program, but many realize that it is desirable and are in the process of determining which is the best way to get at it. It appears that the basic data can best be accumulated by some sort of data processing system which then requires analysis. Material standards are easier to evaluate than design or engineering standards, specifications, or procedures. Most of these reduce engineering effort and train personnel faster. In general, good standards will be used and poor standards should be investigated. Some method of determining how effectively standards are used is necessary to determine which are good and which are bad.

Parts Numbering Systems

F. O. SMELTZ, *Supervisor, Standards Section, Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin, leader of workshop.*

Members of the workshop panel

At the workshop on Numbering Systems—panel members, left to right, James A. Catto; Floyd O. Smeltz, leader; Philip J. Callan, Jr; A. H. King.

were P. J. Callan, Manager, Material Standards Department, Eastman Kodak Company, Rochester, N. Y.; J. A. Catto, Engineering Staff, Ford Motor Company, Detroit, Michigan; A. H. King, Standards Engineering Department, International Business Machines Corporation, Poughkeepsie, N. Y.

"There is no one best part number system any more than there is one best size or type of shoe." This was the theme of the session. Three basic types of numbering systems—Significant, Classified, and Nonsignificant—were represented.

Although the Ford Motor Company has been using a significant parts numbering system since 1932, it is now decentralizing its engineering and design and changing to a nonsignificant numbering system, Mr Catto said. In the old system, the number consisted of a prefix (identifying the model year, type of engine, wheel base, vehicle model); a basic number (four digits assigned to major components in the vehicle); and a suffix (alphabetical letters designating changes in design, color, or similar items). The basic blocks of numbers are exhausted.

In the new nonsignificant numbering system, the first 9,999,999 numbers are reserved for domestic use; all numbers from 10,000,000 and above are assigned to overseas operations. Blocks of part numbers are being assigned to a particular product design activity and that activity is permitted to use the numbers within the block consecutively. Mr Catto believes the sequential numbering system gives greater flexibility and design control.

IBM has always used a sequential numbering system, Mr King said. Whenever a part is shown on a drawing, a special five-digit code number is used to help the Standards Department in putting like parts together. Proper coding has a vital part in successful operation of an accounting machine application, Mr King believes. Several characteristics should be considered in constructing an adequate code:

(1) Flexibility, to permit room for additional entries in sequence.

(2) Scope, to permit expansion for inclusion of additional categories.

(3) Operation, to provide adequate accounting machine segregations.

(4) Convenience, to make it easy to assign numbers.

(5) Construction, to reduce punching and sorting effort by including the least possible number of digits consistent with the problem.

(6) Identification, to facilitate visual identification.

In mechanical sorting of punched cards all numbers must have the same number of digits even though most of these may be zeros, Mr King explained. With mechanical sorting, each digit requires a separate run through the machine.

Eastman Kodak developed an identification numbering system for purchased materials about seven years ago, Mr Callan reported. The company found that it was inconsistent to require that the numbers should have significance and also be as short as possible. In order to have complete significance the number necessarily is very long. Eastman has now agreed on a series of ten-digit numbers, within which an attempt is made to get as much significance as possible.

In setting up the system, gaps have been left for future expansion. The basic number is divided into three parts—the first includes three digits; the next four; and the last three. Of the first three digits, the first two are major classes and the third a subclass. Of the middle four, the first two show "kinds" and the last two "types." Of the last three digits, the first two identify "size" and the last is assigned to "minor variations," such as type of steel.

Questions indicated that those present were interested in details of the systems. In response to a question, Mr Callan explained that the Eastman Kodak standards book makes it possible to find a part once it has been assigned a number. The book lists products alphabetically within their classifications.

In response to a question as to what happens to parts numbers when two parts are welded or assembled together, Mr Catto explained that the Ford Company has assembly numbers as well as parts numbers. A list is kept of the various parts numbers that go into each assembly.

What errors can be expected in transcribing numbers with a large number of digits?, Mr Callan was asked. He replied that there seems to be no more error in working with ten-digit numbers than with six-digit numbers. It takes a little longer to type a ten-digit number than a six-digit number, but not in direct proportion to the additional number of digits.

When there is an engineering change or a minor revision, the same number is used if the parts are still interchangeable, Mr Catto explained. However, a suffix letter may be added to call attention to the slight change. If the two parts are not interchangeable, the new part is given a new number.

The numbers are shown on the engineering drawings for the information of those who use them, Mr Catto said, but the Ford Company provides "engineering releases" as the only formal authentic instructions to the foreman. This numbering system is only for the company's own product and does not include such items as maintenance of equipment or buildings.

If a part is purchased from four different suppliers, the Ford company assigns a separate number to each, disregarding the suppliers' own numbers. This makes it possible to check on the performance of parts received from different suppliers.

NOTE: Papers on the numbering systems of the companies represented on the panel were distributed at the meeting. These are: "Nonsignificant Part Numbering of Engineering Drawings" (J. A. Catto, Manager, Reproduction and Office Services Department, Engineering Staff, Ford Motor Company, Dearborn, Michigan); "Relation of Numbering Systems to Automatic Tabulation" and "IBM Data Classification System" (A. H. King, Standards Engineering Department, International Business Machines Corporation, Poughkeepsie, N. Y.); "An Identification Numbering System for Purchased Materials" and "Classification of Materials for a Purchased Materials Numbering System" (Philip J. Callan, Manager, Material Standards Department, Eastman Kodak Company, Rochester, N. Y.); "A Classified Parts Number System for Purchased Parts, Materials, and Supplies" (F. O. Smeltz, Supervisor, Standards Section, Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin).

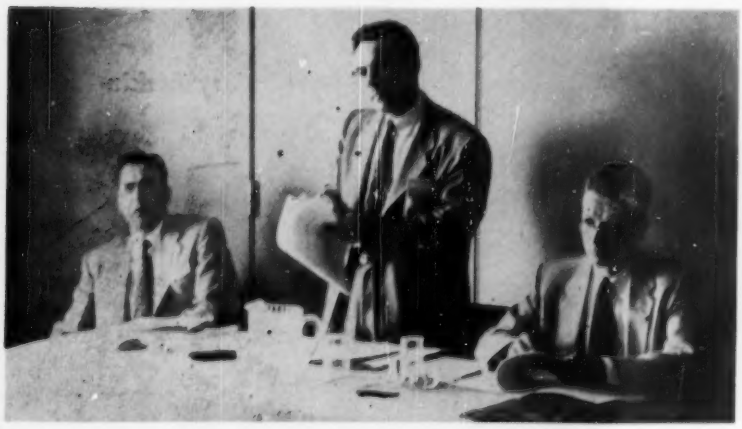
Reproduction and Distribution of Company Standards—

S. H. WATSON, *Radio Corporation of America, workshop leader.*

William B. Fleming, Jeffrey Manufacturing Company, Columbus, Ohio, described his company's methods of duplicating company standards, as an example of activities of a small company. "Starting with typing and duplicating equipment, we now have our own varityper, an addressograph, a multigraph machine, ozalid, and xerography equipment," he said. "Our numbering system was set up on the basis of the Dewey Decimal System, with variations where necessary."

Mr Watson described his company's operations as an example of how a big company does the job and showed how savings are made by planning their operations carefully. He also showed samples of material in different stages of preparation.

S. H. Watson (seated, left), and William B. Fleming at the session on reproduction and distribution of company standards.



Workshop on American Standard Limits and Fits—from left Leslie M. Dalcher; James R. Welshman, Chairman (standing); Ben Hummel.

Significance of American Standard, Limits and Fits for Cylindrical Parts, B4.1-1955—

J. R. WELSHMAN, *Chief Engineer, Research and Development Division, Grinnell Corporation, Providence, Rhode Island, leader of workshop.*

Members of the workshop panel were Ben Hummel, Associate Editor, *Machine Design*, and L. M. Dalcher, Superintendent, Standards and Publications, Fairbanks Morse and Company, Beloit Works, Beloit, Wisconsin.

This recently issued American Standard is intended for use as a guide to help in improving and simplifying products, practices, and facilities, Mr Welshman pointed out. Engineers using this standard must pay particular attention to factors such as length of engagement, bearing load, and speed, he said.

Mr Dalcher, who had served as a member of Sectional Committee B4, gave some of the history of the standard. He pointed out that the recent edition represents agreements reached by delegates from the three ABC countries (United Kingdom, Canada, and the USA).

Mr Hummel has been studying the problems of Limits and Fits for several years. He analyzed the highlights of the standard as:

(1) Preferred basic sizes. This preferred list ranges from 0.0100 to 20.0 in.

(2) Preferred series for tolerances and allowances range from 0.0001 in. to 0.0600 in. standard tolerances.

(3) A table is shown giving the basic tolerance that applies to each of the preferred basic sizes. They are shown in 10 grades with each grade representing similar product difficulties through the range in sizes.

(4) Standard fits. Tables developed on the unilateral basic hole system are shown covering the running fits, locational fits, and forced fits.

(5) In the case of modified standard fits, the bilateral hole, or the basic shaft, will apply. They are explained in Sections 9.1, 9.2, and 9.3.

Answers to the question, "How will you apply this standard to your production?" varied as follows: "It is too new and we have not had time to digest it." "We have been working on the project of adapting this standard to our company's standards and it takes over six months to make the change." "We will be helped considerably, as it allows a great deal more tolerance than we are now using, thus we should be able to reduce the number of plug gages."

It was announced that Mr Hummel has tentative plans to carry out a survey of a large number of firms after they have had a chance to digest the new standard. He expects that results may be published before the end of the year.

[1] For a history of the standard by the chairman of the committee, see "The Significance of the 1955 Preferred Limits and Fits," by Professor Z. R. Bliss, MAG OF STDS, May, 1956, page 136.

The Perkin Centennial

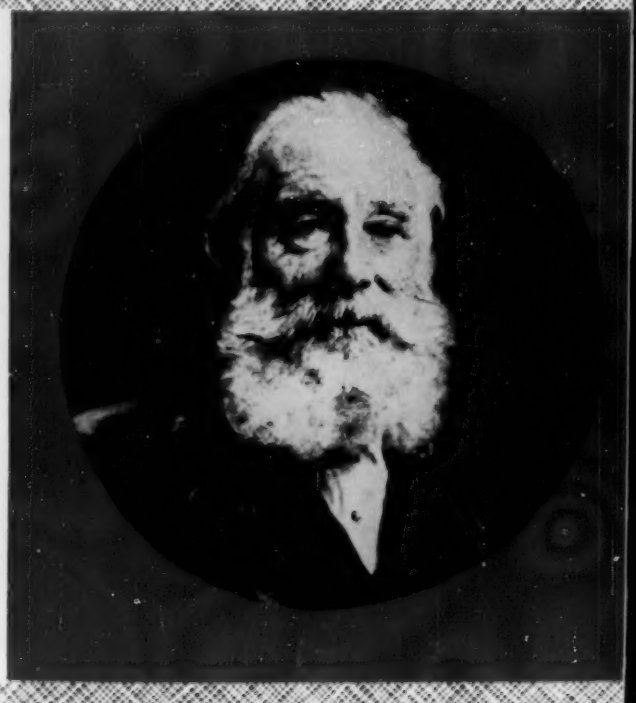
Celebrating 100 Years of Synthetic Dyes

CELEBRATION of the Perkin Centennial is taking place at the Waldorf-Astoria Hotel in New York during the week of September 10. The Centennial is sponsored by the American Association of Textile Chemists and Colorists with 27 other national societies and associations and two departments of the U.S. Government participating.

Recognizing the international significance of standards in assuring uniformly dependable world-wide use of synthetic dyes, particularly in colorfastness and washability of textiles, the first day of the week-long Centennial celebration is International Day. The American Standards Association and the International Organization for Standardization are sponsors of the opening day, September 10. (See program, page 207.)

Sir Robert Robinson, Nobel prize winner, professor emeritus at Oxford, and a director of Shell Chemical Company, Ltd, is giving the

William Henry Perkin



In 1856 William Henry Perkin discovered the first synthetic dye—mauve. His discovery was the cornerstone on which the modern dye industry has been built. It made possible controlled production and reproducible quality of dyes in a great variety of shades that give us the colorful refrigerators, automobiles, textiles, plastics, and other consumer products that we use today. The raw materials and intermediate chemicals used in dye manufacture have also provided a broad range of medicinal, petroleum, and rubber chemicals; and research in dyes has led to development of countless other chemicals and intermediates now used for photography, perfumes, flavorings, insecticides, pharmaceuticals, plastics, resins, agricultural chemicals, and many others. Many of the chemical inventions that are offshoots of dye manufacture have given rise to complete industries in themselves.

principal address at a luncheon on International Day. Sir Robert's major contributions to science have been in connection with the establishment of the qualitative theory of electronic mechanisms in organic chemistry. He played an important part in the development of the chemistry of penicillin. He also made important contributions in connection with the chemical constitution of coloring matters in plants and the synthesis of the pigments occurring in flowers and blossoms. He contributed to defining the arrangement of the atoms in the molecular structure of morphine and played an important role in the production of anti-malarial drugs in World War II. In addition to many awards from British and European scientific societies, Sir Robert has been awarded Franklin Institute's Franklin Medal and the Priestly Medal of the American Chemical Society.

Subject of the morning session on International Day will be Colorfastness of Textiles, sponsored by the American Association of Textile Chemists and Colorists and the American Society for Testing Materials.

Color — The Catalyst of Commerce is the subject of the afternoon session. A panel of representatives of many different industries both in this country and abroad is taking part.

Before Perkins' discovery, in 1856, man had been dependent on the animal and vegetable worlds for his dyes. Dyeing was an art, determined by the skill of the operator in mixing dyes and perfecting his techniques. Today dyeing is a science. Production is controlled by engineering techniques, with reproducible results and controlled quality and performance.

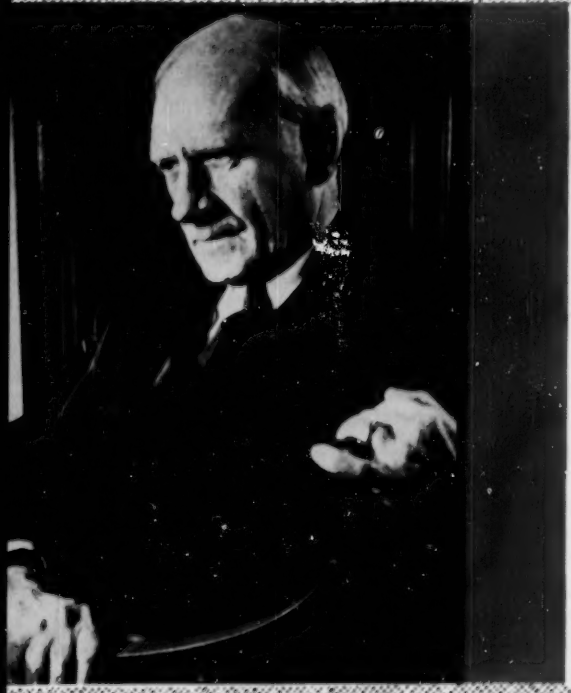
From ancient times man has struggled to reproduce the colors of nature for his own use. He used colored juices derived from flowers, fruits, bark of trees, insects, and shellfish. The range of colors was limited, however, and the great majority of the dyeings were only temporary because so few true dyes existed in Nature that would stand up to the effects of sunlight and washing.

Indigo was one of the few successful colors. A garment dyed with indigo was found in a tomb reputed to be 3000 years old in the ancient Egyptian city of Thebes.

The renowned "purple of Tyre," famed for its beauty and durability, was obtained from different varieties of shellfish and expertly manufactured by the Tyrians. It was a luxury, however—a pound cost the equivalent of today's $150. Today the average price of all dyes produced is $1.17 per pound, as reported by the U.S. Tariff Commission.

Scarlet was the third most durable color of the ancient world. It was successfully used by the Egyptians

Sir Robert Robinson



Leonard S. Little, Textile Consultant, New York, is chairman of the International Day Committee. Members of the committee are:

William D. Appel, chief, Textiles Section, National Bureau of Standards, Washington, D.C.; chairman, ASA Committee L23, USA Advisory Committee for ISO/TC 38, Textiles; chairman, ASTM Committee D-13; Past President, American Association of Textile Chemists and Colorists.

J. Robert Bonnar, sales manager, Dyestuffs and Pigments Division, General Dyestuff Company, Division of General Aniline and Film Corp, New York, N. Y.; Past President, AATCC.

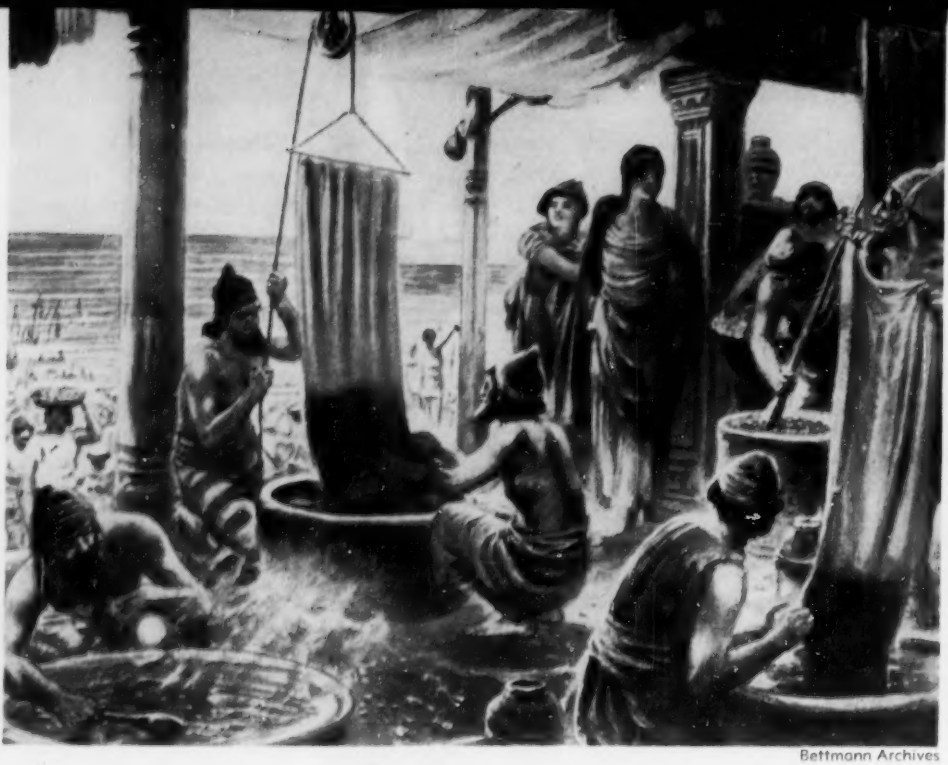
Charles W. Dorn, Director of Research, J. C. Penney Co, New York, N. Y.; chairman, Technical Committee, National Retail Dry Goods Association; chairman, Executive Committee on Research, AATCC.

Charles E. Hilton, chemical engineer, American Standards Association; acting secretary, ASA Committee L23, USA Advisory Committee for ISO/TC 38, Textiles; secretary, ASA Chemical Industry Advisory Board.

Raymond J. Jacoby, consultant, Ciba Co, New York; president, American Association of Textile Chemists and Colorists; chairman, Executive Committee, Perkin Centennial.

Charles A. Sylvester, head, Dye Properties Division, Technical Laboratory, E. I. du Pont de Nemours & Co, Wilmington, Del.; chairman, Technical Committee on Research, American Association of Textile Chemists and Colorists.

G. P. Paine, director of public relations and assistant secretary, American Standards Association, is secretary of the committee.



Bettmann Archives

Manufacturing "Tyrian purple."—This fine purple dye was justly famous in ancient times. It was made in the Phoenician city of Tyre, from a species of shell fish found on the shores of the Eastern Mediterranean. Although the fish was available to others, the Tyrians' skill and knowledge made them pre-eminent over all other purple producers of their time. After a painting by Ambrose Dudley

through application of the mordanting technique. This technique, which causes dye to adhere firmly to the fabric, was believed to have been discovered in India prior to 2000 B.C. Scarlet was so highly regarded that it was reserved primarily for royalty and the military.

Yellows were produced by the Egyptians from saffron, derived from the flowers of the common yellow crocus. Reds were developed from the roots of the madder plant, which was also used to produce purples and browns.

The skills of the dyers in Egypt, India, China, and Persia were brought into Europe by the Phoenicians and Alexandrians, but little technical progress was made on the continent until the 13th century. Up to that time most of the dyeing was done in the home. The first book on dyeing was published in Italy in 1429, and from there knowledge spread to Germany and the rest of Europe, centering especially in Holland and Belgium. The discovery of the New World and the opening of the Cape route to the East brought in new coloring materials and dyeing methods. Cochineal, similar to kermes (used by the Egyptians in making scarlet), was imported from Mexico early in the Sixteenth Century by the Spaniards.

However, little basic progress was made in producing better dyes, with greater fastness of color and more uniform dyeing properties, until the accidental discovery of mauve in 1856.

The discovery was made during an experiment by William Henry Perkin in an attempt to synthesize quinine, using aniline as one of his raw materials. In one of his unsuccessful experiments, a dark-colored mass was formed, but when it was dissolved in alcohol, a violet liquid resulted which had the power to dye silk and wool. Had it not been for the presence of toluidine as an impurity, the development of the first synthetic dye might not have occurred at that particular time. Perkin had the foresight to recognize the industrial possibilties of his invention and, after patenting the process, established the first factory in the world for the manufacture of dyes.

Compared to some of the present-day processes for vat and other type dyes, Perkin's method of manufacturing mauve was quite simple, consisting of only four steps. The yield of actual dye was only five pounds per ton of coal and in 1860 the price of aniline violet in the United States was around $300.00 per pound.

The publication of Perkin's discovery activated interest in the study of the chemical composition of coal tar products by chemists all over the world. During the following 50 years, many important discoveries followed one another in rapid succession. It was found that of the ancient dyes, indigo and turkey red could be produced synthetically and more economically than the natural products. Despite intensive activity on the part of chemists, however, the time element between the development of new dyes in the laboratory to practical commercial production usually was a matter of years, but by 1890, synthetic dyes had attained considerable stature and natural dyes were well on their way to obscurity.

Prior to 1914 only 10 percent of the dyes consumed in the United States were made here. In that year the domestic production was less than seven million pounds. This did not represent complete preparation of the dyes, but merely the combining of certain intermediates with

Program for International Day—opening the Perkin Centennial

September 10, 1956 *The Waldorf-Astoria, New York, N. Y.*

Morning Session • Empire Room • 9:30 A.M.

Colorfastness of Textiles

sponsored by the American Association of Textile Chemists and Colorists and the American Society for Testing Materials

Chairman—Charles A. Sylvester, Chairman, Technical Committee on Research, AATCC; Head, Dye Properties Division, Technical Laboratory, E. I. du Pont de Nemours & Co., Wilmington, Del.

Welcome—Raymond W. Jacoby, Chairman, Executive Committee, Perkin Centennial; President, AATCC; Consultant, Ciba Co., New York, N. Y.

Moderator—William D. Appel, Chairman, ASA Committee L23, USA Advisory Committee for ISO/TC38-Textiles; Past President, AATCC; Chairman, ASTM Committee D13; Chief Textiles Section, National Bureau of Standards, Washington, D. C.

"A Century of Progress in Colorfastness Test Methods"

M. L. Staples, Chairman, Subcommittee B-1 on Chemical Test Methods, ASTM Committee D-13 on Textiles; Assistant Director, Textile Department, Ontario Research Foundation, Toronto, Canada

"Current Developments in Colorfastness Testing"

In France—J. P. Niederhauser, Delegate of the French Commission on the Fastness of Colors and Prints; Compagnie Francaise des Matieres Colorantes, Paris, France

In Germany—Dr Paul Rabe, Farbenfabriken Bayer A. G., Leverkusen-Bayerwerk, Germany

In Switzerland—Dr Henry Ris, Supervisor of Coloristic Laboratory, J. R. Geigy, S.A., Basle, Switzerland

In the UK—Dr P. W. Cunliffe, Chairman, Fastness Tests Co-ordinating Committee, The Society of Dyers and Colourists; Research Manager, British Cotton and Wool Dyers Association, Ltd, Manchester, England

In The USA—Charles A. Sylvester, Chairman, Technical Committee on Research, AATCC

Luncheon Session • Starlight Roof • 12:15 P.M.

Presiding—H. Thomas Hallowell, Jr, President, American Standards Association; President, Standard Pressed Steel Co., Jenkintown, Pa.

Greetings—Raymond W. Jacoby, Chairman, Executive Committee, Perkin Centennial; President, AATCC; Consultant, Ciba Co, New York, N. Y.

"Sir William Perkin—His Life and Work"

Sir Robert Robinson, O.M., M.A., D.Sc., LL.D., F.R.S.; Official Representative of The Society of Dyers and Colourists

Interlude—"Rhapsody in Color," based on Liszt's Second Hungarian Rhapsody, translates sound into light and color. "Seeing sound" is one of America's newest art forms. This seven-minute film was created by Mary Ellen Bute and produced by Ted Nemeth Studios to synchronize abstract color forms to music.

Luncheon Session continued • Starlight Roof • 2:15 P.M.

Color—The Catalyst of Commerce

sponsored by the American Standards Association and the International Organization for Standardization

Chairman—Charles W. Dorn, Chairman, Executive Committee on Research, AATCC; Chairman, Technical Committee, National Retail Dry Goods Association; Director of Research, J. C. Penny Company, New York, N. Y.

Moderator—J. Robert Bonnar, Past President, AATCC; Sales Manager, Dyestuffs and Pigments Division, General Dyestuff Company, Division of General Aniline and Film Corp, New York, N. Y.

Panel

Advertising—John A. Cairns, President, Anderson & Cairns, Inc, New York, N. Y.

Automobiles—Virgil M. Exner, Director of Styling, Chrysler Corp, Detroit, Michigan

Consumer Products—Miss Willie Mae Rogers, Director, Good Housekeeping Institute, New York, N. Y.

Converting—To be announced later

Dyestuffs and Fine Chemicals—James L. Naylor, Manager, Dyestuff Department, American Cyanamid Co, Bound Brook, N. J.

Fabric Manufacturing—to be announced later

Fiber Manufacturing—Harry L. Dalton, Vice-Chairman of the Board, American Viscose Corp, New York, N. Y.

Finishing—W. R. MacIntyre, President, Joseph Bancroft & Co, Wilmington, Del.

Garment Manufacturing—Joseph Knapp, President, Fox-Knapp Manufacturing Co, New York, N. Y.

Packaging—Albert Kner, Color Consultant and Chief Designer, Container Corporation of America, Chicago, Ill.

Paper—George Stuhr, Sales Manager, Southern Craft Division, International Paper Company, New York, N. Y.

Plastics—L. Kenneth Merrill, Vice-President, Bakelite Co, Division of Union Carbide & Carbon Corp, New York, N. Y.

Retailing—Philip M. Talbott, Senior Vice-President, Woodward & Lothrop, Washington, D. C.; President, National Retail Dry Goods Assoc.

Safety—Arthur S. Johnson, Vice-President, American Mutual Liability Insurance Company, Boston, Mass., Chairman, Standards Council, American Standards Association

Style and Fashion—Mrs Drothy Liebes, Textile Designer and Colorist, New York, N. Y.

Television—Robert A. Seidel, Executive Vice-President, Consumer Products, Radio Corporation of America, New York, N. Y.

Guests from Other Countries

Dr George Hebelein, Director, Hebelein & Co A. G., Wattwil, Switzerland

Clifford Paine, Development Director, Imperial Chemical Industries, Ltd.; President, British Society of Dyers and Colourists, London, England

Another panelist from abroad to be announced later.

Registration

Those registering for the Centennial may attend International Day and all general sessions and exhibits of the Centennial during the week of September 10-16. Perkin Centennial registration fee: $10. International Day Luncheon and Afternoon Panel session: $10. Tables of ten may be reserved with advance registrations.

Information and registration forms may be obtained from: Secretary, International Day Committee of the Perkin Centennial, c/o American Standards Association, 70 East 45 Street, New York 17, N. Y. Registration headquarters during Centennial week will be located at the Grand Ballroom Check Room on the second floor of The Waldorf-Astoria.

other raw materials to form the finished product. When foreign sources of supply were cut off during World War I, a number of chemical manufacturers started the manufacture of dyes. By 1917, 81 concerns were engaged in dye production, but the range was limited to those for which the need was greatest. The initial hazards were many; lack of experience, financial barriers, and other factors soon eliminated many of the pioneers and by 1937 the number of domestic producers had dropped to 43, who produced over 122,000,000 pounds at a sales value averaged at 58 cents per pound.

Today, within a span of about 40 years, America is self-sufficient and has a dye industry that is unsurpassed. Its products are the equal of any produced by other nations. Dye-consuming industries have at their disposal an annual production of around 150,000,000 pounds of coal tar colors consisting of more than 1000 different dyes—which embody degrees of fastness capable of meeting almost every normal requirement.

This paper was presented at the Spring Meeting of the Company Member Conference, American Standards Association, Manger Hotel, Cleveland, Ohio, May 15.

Standardization by Punch-Card Methods

by A. H. KING
Standards Engineering Department
International Business Machines Corporation,
Poughkeepsie, New York

Mr King has responsibility for methods and procedures, with emphasis on applying punch-card methods to standardization, in the Standards Engineering Department at IBM's Poughkeepsie plant. A 1936 graduate of the University of North Carolina, with the BSEE degree, he joined IBM in 1938. As Manager of Customer Engineering in various sales offices, he worked closely with IBM customers in developing machine procedures to suit their various needs. He was assigned to the Standards Engineering Department at the Poughkeepsie plant in 1953.

THE first step in standardization is simplification. Before we can simplify, we first must catalog the many thousands of existing parts. Then catalogs must be maintained to record new parts being introduced, and to remove parts being obsoleted. After simplification and then standardization, we need to know how effective the parts standards program has been. Individual parts are used on many different assemblies and on many different machines. Some means must be found to gather together and to evaluate all of the uses of the many individual parts. It is necessary to know whether or not engineers and designers are using standard parts in preference to nonstandard parts on new applications.

In the IBM Standards Engineering Department, we have developed several procedures using punch-card methods to procure a solution to these problems. The machine-produced results of two of these major procedures are the Coded Parts List, and the Standards Parts Program Evaluation Report. These two programs assist us in establishing the need for a parts standard; in gathering, cataloging, and maintaining parts information; in developing and maintaining the parts standard, and in evaluating the effectiveness of the published parts standard.

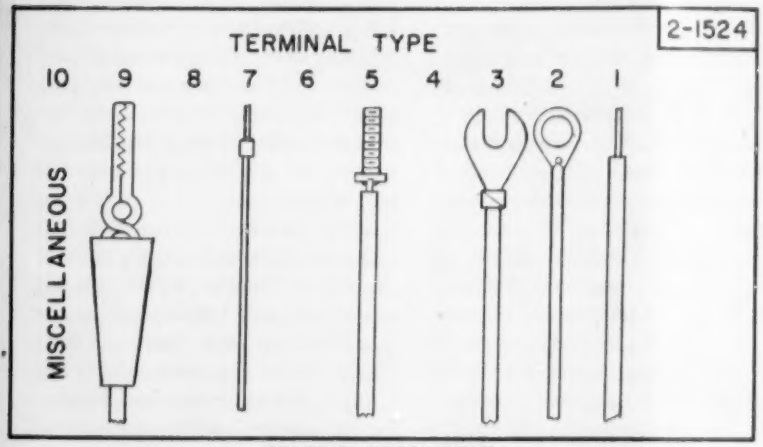
Coded Parts Lists

Coded Parts Lists are lists by

code of all parts that have been released to Production, each list being in dimensional or characteristic sequence, or in both.

The Coded Parts List program was first conceived as an answer to the needs of the Standards Engineer. He needed to know (1) what parts were released in the code that he was attempting to standardize, (2) which of these parts were duplications that could be eliminated, and (3) once the standard was developed which of these existing part numbers could be put on the Parts Standard Sheet.

As the Coded Parts List Program was being planned and developed, it became evident that here was a means of providing the designer with information to supplement the standard parts information. We were providing the engineering design groups with Standards Books from which they could obtain parts information for standard parts. But what were these groups doing when faced with the need for a nonstandard part? In some cases someone would recall that such a part as the one desired was used somewhere else. In other cases the designer would leaf through the then incomplete Coded Part Print File folders that the Standards Engineering Department had been accumulating.



COLUMN DESCRIPTION

A. Length
B. Awg Wire Size
C. Wire Part Number
D. Wire Color
E. Tracer Color
1. *Red*
2. *Blue*
3. *Green*
4. *Brown*
Tracer Color (continued)
5. *Black*
6. *Orange*
7. *Yellow*
8. *White*
F. Terminal Type and (size one end type 2 and 3)
G. Terminal Type and (size other end type 2 and 3)

FIGURE 1

Coded Parts list for Code 2-1524, Wire Connectors. Page 1 of the list is shown in part below. A description of each column is given on page 2 of the list (left). Terminal types shown in drawing above are those represented in Columns F and G.

IBM

CODED PARTS LIST

DATE: 10/14/55 PAGE 19 CODE 2-1524

TYPE	A	B	C	D	E	F	G	MATL	FIN	NOTE			PART NO.
	11000	18	97029	BLACK		2 266	2 266						319883
	11000	20	22209	NATURAL	5	7	7						282548□
	11000	20	138044	NATURAL	3	1	7						302122*
	11000	20	153749	ORANGE		1	7						317919*
	11000	20	153751	WHITE	2	1	7						504333*
	11000	20	213914	WHITE		1	7						317922*
	11000	20	213915	GREEN		1	7						317935
	11000	20	213916	YELLOW		1	7						303580*
	11000	20	213916	YELLOW		7	7						326854
	11000	20	213916	YELLOW		1	3 131						335934
	11000	20	213916	YELLOW		1	2 195						502547
	11000	20	213917	RED		1	7						317921*
	11000	20	213918	BLACK		3 180	3 180						507612
	11000	20	213919	BLUE		1	7						317930
	11000	20	213919	BLUE		1	7						326846
	11000	20	213921	BROWN		1	7						317920*
	11000	20	213921	BROWN		3 180	3 180						507622

This chance locating of an existing part could be eliminated by the positive location of a part through use of Coded Parts Lists. Also, parts substitution and parts identification requests made by the manufacturing organization could be answered rapidly. Another valuable use of Coded Parts List would be in the Print Review Groups of the Standards Engineering Departments. While reviewing and coding prints of the parts drawings, the parts could be checked to see if they were duplications or near-duplications not previously recognized as such by the designer.

A Coded Parts List program is developed in six steps.

The first step is development of a suitable code structure to fit the needs of the company concerned. It may be that this code structure is already in existence and can be used "as is," or with some minor modifications to fit machine-accounting requirements. Or it may be that an entirely new code structure must be developed. This immediately raises the question of a significant numbering system vs a nonsignificant numbering system. Regardless of the numbering system in effect, or to be developed, a code structure is necessary to group like parts together by punch-card methods. IBM uses the nonsignificant numbering system, and the procedures described here revolve around a separate code structure that provides the desired major groupings of parts. However, the procedure is just as applicable to a significant part numbering system.

Actually a block system is used by IBM in which a block of numbers is assigned to a given machine group to identify parts released by that group. But this does not assist in identifying what the part is; nor, for that matter, does it eventually assist in identifying on which machine the part is used. Interchange of parts and multiple-usage of parts soon reverts the part numbering system to a strictly nonsignificant sequential numbering system. To group parts into their categories, a separate code is used.

A five-digit Standard Subject, or Code, is used to group together parts of similar nature. The first three digits of the code are known as the Class. This provides for the major differentiation of parts into their broad categories, such as threaded fasteners, gears, switching devices, resistive elements, etc. The last two digits of the code are known as the Minor Subject. This permits the finer breakdown of Class into as complete an identification of a part as is desirable. As an example: 1-60 is the class for gears. This is further subdivided into 1-6010 Spur Gears, 1-6020 Bevel Gears, 1-6021 Spiral Bevel Gears, etc.

With a coding system developed, the next step is to establish definitions for each of the codes. Each code must be defined in simple, exact language to avoid misunderstandings and misinterpretations. Since it is probable that more than one person will be involved in the coding of parts at various locations, the more exact, and at the same time, the more simple the definitions are, the less chance there will be of differences in coding. Wherever a suitable definition has been established by a national or industry standards organization, that definition is used rather than developing a new and different definition.

The next step is the coding of all existing parts drawings. Personnel who will be involved in this coding need not be engineers, or even technicians. Clerks, trained to read prints and instructed in codes and their definitions, can accomplish this step. One by one, every drawing in the master drawing file must be examined. If the examiner decides the part fits one of the codes, he notes on a list the part number, engineering change number, and the code that he is assigning to the part. At this stage, coding should be very liberal. It is better to code a part erroneously than not code at all and lose the record of a part that possibly should be coded. These "doubtfuls" can be continued in or removed from the system during the actual preparation of the Coded Parts Lists.

The lists of part numbers and their respective codes prepared by the drawing review personnel serve as the source document for card punching. From these lists, an IBM card is punched for each part. These cards contain the same information as was handwritten on the list; namely, part number, engineering change number, and code. These cards, containing only this basic information, are called Suspense Cards in our nomenclature. After all card-punching is completed, the Suspense Cards are machine sorted to part number and code, and then run through the Alphabetic Accounting Machine to produce a list of the parts by code. The advantages of punch-card methods make their first appearance here. We started out with a mass of part numbers and codes not in any particular sequence. Now we have listings by code in part number sequence for all the part numbers in each code.

The next step is the procurement of prints of the coded parts to build up a Coded Part Print file. Ordering is done in code sequence from the parts lists prepared from the Suspense Cards. The ordering of prints is done by code rather than by part number alone. If prints were ordered in a straight part-number sequence, it would be impractical to begin developing the first Coded Parts List until the last print ordered is received and the segregation of prints by code is completed.

After the prints for a code have been received, Coded Parts List preparation can begin. The prints in the print folder for the code are examined (1) to see if they fall into well-defined types within code, (2) to determine what information is deemed necessary to describe the part adequately, and (3) what sequence the information should be in, that is, which are the most important characteristics, and which the least important. This initial review is done by the Standards Engineer, but the detail work by the same skilled clerks who did the initial coding of the drawings.

At this time, no standard format for all codes is practical. It is not known, for example, how many characteristics or dimensions need be shown to describe a part in each

code. Nor is it known how many digits are needed to describe each characteristic or dimension. Each code, therefore, is allowed to establish its own format to fit its own needs. The Standards Engineer decides how many characteristic or dimensions are needed to describe the part, and the sequence across the page in which these should be placed. The Coded Parts List clerk then allots the field size for each characteristic as the part dimensions themselves dictate.

After the Standards Engineer has established the required format for a given code, the Coded Parts List clerk takes over. He examines every print in the print folder, and enters the information from the print onto a preparation sheet. This preparation sheet is ruled and its columns sequenced in the same order and of the same size as was decided upon for the Coded Parts List format. During this preparation sheet work, if any part does not seem to fit the code definition, the Coded Parts List clerk refers the print to the Standards Engineer for disposition.

Punch cards are prepared from the entries on the preparation sheet. Each card is machine-verified, so no proofreading is required for any future lists prepared from these cards. After these cards, known as CPL Detail Cards, are processed to produce the Coded Parts List, they will replace the Suspense Cards originally prepared for the particular code. This replacement is part number for part number, or card for card. Any Suspense Cards left over indicate missing prints, or changes that have occurred in the parts for that code since or during the preparation of the detail cards.

The CPL Detail Cards for each code are sorted to the dimension or characteristic desired. It has been found that the maximum sort required to align the CPL Detail Cards in adequate sequence is by type and three dimensions or characteristics. After the sorting operation, the cards are run through the Alphabetic Accounting Machine to prepare the flexible format Coded Parts List. Code 2-1524, Wire Connectors, for example, has 10 fields of information or characteristics, plus the part number. The number of digits per field varies from 1 to 7. A Coded Parts List for another code might have only four fields with number of digits per field varying from 2 to 10. It might very well be that no two Coded Parts Lists will end up looking alike as far as number of characteristics and number of digits within each field is concerned. Because of the flexibility of the IBM Punched-Card Accounting Machines, a varying format can be handled. With one control panel, and with the same machine set-up, code can follow code in printing regardless of differences in format from code to code.

Each Coded Parts List is contained in its own folder. The upper half of Figure 1 is actually the flap of this folder. When not in use, the flap folds down over the list. Information is provided on the flap to identify properly and use the Coded Parts List in locating the desired part within the code. This information includes a definition and a description of each column of information on the Coded Parts List. This particular method of presenting head information was chosen as most convenient. It eliminates the need for presenting this information at the top of each and every page of a Coded Parts List, and it also serves to separate code from code.

When Coded Parts Lists have been prepared for all, or nearly all, codes, a standard format can be established. An examination of all the Coded Parts Lists prepared to date will reveal what is the compromise maximum number of characteristics needed to describe a part adequately. Also, the number of digits required for each field can be determined. In the case of IBM's standard format for Coded Parts Lists, a total of six fields of seven digits and one field of six digits was found to be sufficient for the fields of dimensional characteristics. Added to this are four fields of two digits each for information that was found to appear on a majority of the Coded Parts Lists—Type, Material, Finish, and Notes. Figure 1 shows the Coded Parts List for Code 2-1524, Wire Connectors.

The original Coded Parts Detail Cards can be converted to a standard card format by use of an IBM Reproducing Punch. No single control panel can be wired to accomplish this. Part of the control panel wiring will vary from code to code as each flexible format is converted to a standard format. But, with each control-panel set-up, all the cards for that particular code can be converted at the rate of 100 per minute.

In a few cases, the number of fields on the Coded Parts List may not be sufficient to describe a part adequately. Here multiple-line printing may be used. This means that two or more cards are punched with descriptive material for the part. One restriction, however, is that the identical information must be in each of the cards in the fields that require normal sorting.

Maintenance of Coded Parts Lists

The maintenance of Coded Parts Lists actually begins before even one Coded Parts List is prepared. It is a continuing process so that Coded Parts Lists can be revised to reflect changes to the parts within each code, such as new releases, engineering changes to existing parts, obsoletions, or adjustments in coding to move a part from one code to another.

All Engineering Change folders are routed through the Standards Engineering Department. Here, as part of the Print Review procedure, each drawing in the Engineering Change folder is given a code number, or the existing code on the drawing is verified. Record is kept of the part number, its status, engineering change number, and code. The status is a single-digit code to indicate whether the part is a new release, changing part, obsoleted part, or a re-coded part. The use of this status code will become apparent further along in the procedure.

Suspense Cards again enter the Coded Parts List program. At the end of each calendar month, the records of parts changes kept by Print Review are gathered, and Suspense

VARIABLES ENCOUNTERED *in analysis of the Evaluation Report and facts on new release and on parts application are fed into the 705 Electronic Data Processing Machine for factual and unbiased evaluation of each code.*

Cards are punched. These cards show part number, date, status code, engineering change number, and code. These cards are used to prepare the Coded Parts Activity Report (page 215), and then are placed in a Suspense Card File. These Suspense Cards must be matched eventually to a print of the part and an entry on the Coded Parts List. This print is sent normally to the Standards Engineering Department when the part or change to a part is released to Production. The Suspense Card File is machine-searched periodically to see if any Suspense Cards are still in the file that exceed the maximum time-lag that can be expected between the Print Review operation and the release to Production. In this way we are assured that no parts are actually released to Production without our being aware of it.

A preparation sheet is maintained for each code that has had a Coded Parts List prepared. When a print is received for such a code, information from the print is entered on the preparation sheet for the code in question. The information entered is exactly as was required to enter a part on the original Coded Parts List. That is, all the dimensions, characteristics, etc, are written onto the preparation sheet. The print is then filed in its proper Coded Print File folder. In the event the part is for a code that does not have a Coded Parts List as yet, the print bypasses the maintenance preparation sheet stage and goes directly to the Coded Print File folder.

A Coded Parts List is revised when sufficient entries have been made on a code's maintenance preparation sheet to warrant a revision of a Coded Parts List, or when six months have elapsed since the last issue of the particular Coded Parts List. At this time the entries on the preparation sheet are checked against the Suspense Cards, the correct status code added to the preparation sheet entries, and matching Suspense Cards discarded. The preparation sheet entries for changing Coded Parts List entries (engineering change, obsoletion, recoding, or other correction) are matched against the existing CPL Detail Card. These matching cards are discarded.

The preparation sheets and the adjusted original CPL Detail Cards are delivered to Machine Accounting. Here new cards are punched, added to the original cards in the proper dimensional sequence, and a revised Coded Parts List printed.

It is in the revision of Coded Parts Lists that the advantages of using punch-card methods become most apparent. We are working on a three-month revision cycle for all Coded Parts Lists. This means about 100 codes are revised each month. These 100 codes contain on the average 17,500 parts of entries. Of these, 2000 entries are being changed in one way or another. This is approximately a 12 percent change; in other words, 88 percent of the information on the Coded Parts List requires no change. How simple it is to punch the 2000 new CPL Detail Cards during a one-month period, machine-insert them in the proper place in the existing 15,000-16,000 CPL Detail Cards and run new Coded Parts Lists at the rate of 150 entries per minute. In about two hours the Alphabetic Accounting Machine has listed all the codes being revised for that month. With punch-card methods, we have two men part time on maintenance and revision plus one per week in Machine Accounting.

Supplemental Parts Lists

Supplemental to the Coded Parts Lists are three additional parts listings that support the Coded Parts List program. These lists are obtained as by-products of the program, and do not entail any additional work on our part. All of the lists are machine-prepared from the same

CODE	TITLE	PARTS IN CODE NSTD.	STD.	TOTAL	NEW REL	APPLICATIONS NSTD.	STD.
2-1511	SOLDER BNDG POST	28		28	1	31	
2-1512S	CONT SPRING TERM	159	9	168		49-	
2-1520S	PLUG WIRES	46	24	70		22	3
2-1521S	WIRE CONNECTORS	297	7	304	13	94	1
2-1523S	JUMPERS BARE	120	21	141		52	186
2-1524S	JUMPERS INSUL	1265	380	1645	52	137	231
2-1525	JUMPER SHIELDED	54		54	6	2	

FIGURE 2. *Part of a sample page from one of the quarterly Evaluation Reports. Totals shown are: Nonstandard parts in the code; standard parts in the code; total parts in the code; new parts released during the quarter; net applications of nonstandard parts; net applications of standard parts.*

cards that are used for the Coded Parts List.

The Master Numeric Parts List is a list of all coded part numbers, in part number sequence without respect to code. This list shows part number, code, type, and A, B, and C dimensions for all coded parts released to Production. It also shows part number and code only for coded parts in process but not yet released to Production. This Master Numeric Parts List is used primarily as a reference to locate parts on a Coded Parts List or in the print file when only the part number is known.

The Master Numeric Parts List is prepared quarterly from a deck of cards known as the Cross-Index Card File. This file is an exact duplicate of the CPL Detail Card File plus the Suspense Cards. A duplicate deck is used to avoid the necessity of sorting the entire files of detail cards and suspense cards to part number, and then re-sorting them into separate files again by code after the Master Numeric Parts List is printed. Also, and more important, this duplicate deck is available and ready for use without disrupting the Coded Parts List revision program that is in process continuously. The Cross-Index Card File has another use (page 215).

The Control List is a list of parts in part number sequence within code. This list, through the inclusion of the engineering change number, provides control of the code to assure that the part shown on the Coded Parts List is to the latest engineering level. The Control List also provides a means of checking the completeness and up-to-dateness of the Coded Parts Print Files at their various locations. This list is prepared at the same time as the Coded Parts List, using the same cards that were used to prepare the Coded Parts List. For this list the CPL Detail Cards are sorted to part number sequence instead of the dimensional sequence for Coded Parts Lists.

The Revision List is a list prepared at the time a Coded Parts List is revised. It is printed from the cards that are being added to, changed on, or deleted from the original CPL Detail Cards. Shown on the list are part number, engineering change number, and status code. This status code indicates to all concerned why the part is changing on the Coded Parts List. This change may be a new part release, an engineering change to an existing part, obsoletion, re-coded part, or other correction. This list is used to adjust the Coded Parts Print Files at their various locations, and to provide the Standards Engineer with a guide to check on the parts activity within the code.

Parts Standardization Program Guidance and Evaluation

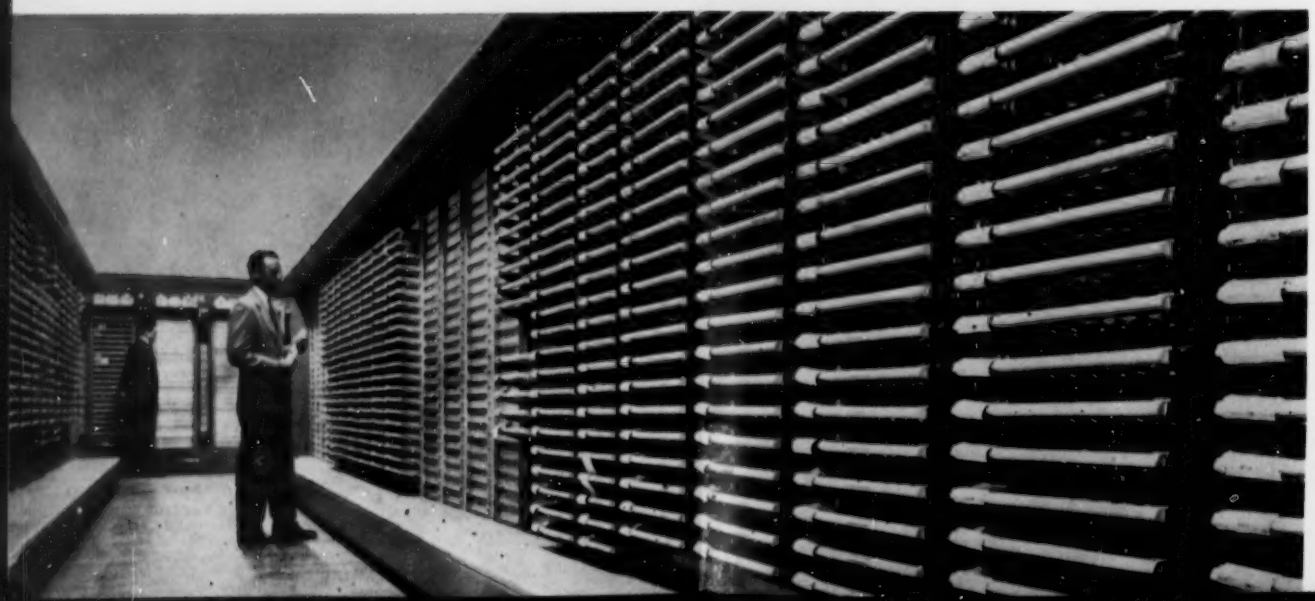
The Coded Parts Activity Report is tabulated at the end of each month, using the Suspense Cards which were prepared as a part of the Coded Parts List maintenance program. This report was the first tool developed to measure the effectiveness of the Parts Standards Program. The status code in the Sus-

ALPHABETIC ACCOUNTING MACHINE *lists in two hours all codes being revised during a single month.*

Where Coded Parts are used by IBM . . .

STANDARDS CONTRIBUTE *to efficiency of this two-mile long conveyor system at IBM's new Kingston plant where electric typewriters are now assembled. At right, standard printing quality of partly assembled typewriter is controlled by checking performance with electronic device.*

STANDARDIZATION *is basic in large-scale computers for nation's new defense intercepter network (SAGE). Display console (left) shows air situation relayed by radar. To stop unauthorized planes, computer feeds directions to intercepting jet aircraft. Below — module units and standard printed wiring circuits made possible the "pluggable units" (shown here). Individual units can be plugged out and replaced with no delay wherever trouble may develop.*



pense Cards distributes the total parts activity for each code into columns headed "new release," "engineering change," "obsolete," and "adjustment." Monthly as well as year-to-date totals are shown for each category of activity. In addition, net change and total parts are shown for each code. From this report the increase or decrease in parts in the code can be plotted to show the effect of new release vs obsoletion. Any abnormal changes, either for the better or for the worse, can be checked to discover the cause and to help indicate what action, if any, should be taken by the Standards Engineering Department.

The other basic factor that must be known is the new application of existing parts. The Bill of Material Parts Activity Report fills this need. The B/M Parts Activity Report is tabulated at the end of each quarter, and annually. B/M Parts Cards are provided to the Standards Engineering Department as a by-product of the punch-card methods used in the Production Control Department. Punch-cards are used to prepare and maintain all the Bills of Material Parts Lists for the construction and assembly of machine units and machines. As a B/M Parts Card is added to or deleted from this B/M Card File, a duplicate of the card is made and sent to the Standards Engineering Department. At the end of the quarter, these B/M Parts Cards are sorted to part number, proper parts code added by machine methods from the Cross-Index Cards, and a summary tabulation prepared by code. The report shows for each code the total of different part numbers used on Bills of Material and the total applications for these part numbers. These totals are separated by standard and nonstandard parts. Since this type of report does not have totals that are cumulative, a similar report is run annually to use in the annual evaluation.

Standards Parts Program Evaluation Report

The Evaluation Report is prepared quarterly and annually from a combination of summary totals by code from the Coded Parts Activity Report and the B/M Parts Activity Report. Figure 3 is a sample page from one of the quarterly reports. The totals shown are: nonstandard parts in the code, standard parts in the code, total parts in the code, new parts released during the quarter, net applications of nonstandard parts, and net applications of standard parts. Thus we have the basic information needed to evaluate the effectiveness of a published standard: Were new releases moderate in quantity; and did the standard applications exceed the nonstandard applications? For over-all evaluation, the cards that contain the information can be run in any sequence desired. For example, by code, by new release quantity, or by standard application quantity. For more detailed analysis, the Detail Cards (which were summarized to prepare the report) can be listed to show actual application by individual part number.

The Evaluation Report provides Standards Engineering management with the facts and information necessary to direct effectively the emphasis of the Parts Standardization Program:

(*a*) The report highlights those codes in which existing standards are seemingly effective or ineffective. If the report shows a high usage and application of standard parts and a low new release, this is an indication that the published standard is effective. Or, if the report shows a high usage and application of nonstandard parts, possibly accompanied by a large number of new releases, this is an indication that the published standard is ineffective. In such a case, the Detail Cards are listed by part number and individual part number applications to see what parts are being used. This may show that there has been a change in the art of that particular code. Normally, we try to keep alert to such changes before the report alerts us to them, but it is possible the shift may be so gradual, or there may be other reasons, that it went unnoticed until highlighted by the report. Or it can be that examination may reveal nonstandard parts are being used because the standard parts are unrealistic. In either case, revision action is indicated for the published standard.

(*b*) The report indicates those codes that need standardization, or those that do not. If the new releases are low in number, accompanied by a low parts application, this indicates there is little activity in that code, and therefore standardization effort is better directed elsewhere. If the new releases are low in number, accompanied by a high parts application, this indicates the code has in effect standardized itself. In this case, a standard can be published to formalize this self-standardization, or no action need be taken as management may deem appropriate. If the new releases are high in number, and the applications either high or low, standardization effort is indicated. In some cases it has been found the fault is with the definition. Because of too broad a definition, too many special items are being included in the code, which distorts the true picture. Other cases offer true indications that standardization is required to control effectively the unnecessary release of new parts.

What is the future in these procedures? The answer seems obvious —these procedures will be applied to Electronic Data Processing Machines, particularly for the Evaluation Report. Plans are now in progress to utilize the extreme speed of the so-called "giant brains" to digest and summarize the parts release and parts applications data. This will not only reduce the lag time between end of quarter and issuance of the report, but also will make practical and possible the issuance of this report on a monthly and cumulative basis. However, the biggest plans for the future are in the analysis of the Evaluation Report itself. It is necessary for us in properly using the present report to temper the results by many mental factors—such as a personal knowledge of what machines were released to Production in this period, were they basically electro - mechanical or electronic, how many engineers are working on the various jobs, what was the previous new release trend, what was the previous standard vs nonstandard parts usage and application trend in prior periods, and so on. It is our intention to feed all these variables into the 705 Electronic Data Processing Machine, plus the facts on new release and on parts application, and end up with a completely factual and unbiased evaluation of each and every code, standardized or not. With this, the next step is logical and simple—to tie the dollar sign to each Parts Standard publication and be able to establish a balance sheet showing the cost of a standard vs the profit of a standard.

Council plans new program on

Nuclear Energy

"By your actions today you will determine American Standards Association destiny for some time to come." This was the message of A. S. Johnson, chairman, to ASA's Standards Council at its meeting June 1. "This agenda reveals subjects that put ASA procedure squarely to the test of evaluating new knowledge," he said, "finding it possible to codify it early for the greatest use of all America; while in the same agenda are topics that suggest that conformance to a well worked out pattern must come first."

"Industry needs standards from new knowledge now more than ever," he declared. "Nonstandard performance is costly, wasteful, and frustrating. We seek standards that are dynamic — standards that are bench marks in the progress along the path of development of the 'best known way' toward 'the best way.' "

Mr Johnson was referring particularly to three questions that were before the Council for action. One of these was a report presented by Morehead Patterson on behalf of the Planning Committee on Nuclear Energy. A second was a report on the scope of activity of the American Standards Association. A third was a suggestion that all proposed American Standards should be referred to legal counsel for advice before approval by ASA.

The report presented by Mr Patterson recommended that the Standards Council authorize establishment of a Nuclear Standards Board and that the board be organized as soon as possible. It also recommended that the Standards Council initiate a number of projects in this field under the sectional committee method.

The committees recommended were: General and Administrative Standards for Nuclear Energy; Nuclear Instruments; Electrical Requirements for Reactors and Nuclear Power Systems and Generation and Application of Nuclear Radiation; Chemical Engineering in the Nuclear Field; and Reactor Hazards. At the Council meeting another proposed committee was added, on Mechanical Requirements.

Mr Patterson's report also recommended that the Board of Directors

Morehead Patterson

take necessary steps to finance standardization work in the field of nuclear energy and make plans to extend the ASA staff to take care of the work.

A motion to set up a Nuclear Advisory Board rather than a Nuclear Standards Board was voted down.

In presenting the report, Mr Patterson said it had become apparent that if this job is done now, a good deal of the chaos that usually attends the development of a new industry could be prevented.

During discussion it was warned that there might be a danger of setting up standards too early, resulting in a road block to progress. On the other hand, it was pointed out that for once, the American Standards Association, as the national standards body, is attempting at the beginning of an art to lay a basis for nationally-acceptable standards rather than trying to catch up with the need for standards after practice had become set in divergent patterns.

Explaining the need for Standards Council action, J. R. Townsend, Sandia Corporation, and chairman of the special committee on Scope of Activity of ASA, pointed out that radiation is a new environment today. "We are now faced with an important national question," he said. "That is how to handle the tremendous problem of this new environment of radiation. It impinges on everything we have to deal with in science and industry, and it is extremely important that we get assistance and help from all the organizations in the field. There is no question that we want the advice and knowledge and broad-gage view of all these organizations on this entire subject. It seems that the American Standards Association, because of its organization and the level of the organizations affiliated with it, offers an umbrella that is large enough to encompass this entire field. Let's go ahead with the Planning Committee's proposal for a Standards Board and bring together all the agencies and instrumentalities that can contribute to this important subject, with the belief and in the faith that ASA will look to all its sponsor organizations to help solve this tremendous problem."

Although the vote of the Standards Council at the meeting was strongly in favor of organizing the Standards Board and recommending to the Board the organization of the proposed sectional committees, the question is being submitted to letter ballot vote of the entire Council.

A question by legal counsel as to whether standards should be exam-

ined by counsel before approval as American Standard was referred to the Standards Council for its recommendations to the ASA Board of Directors. The proposals of the legal counsel included definitions of a "standard," a "specification," and of "standardization" which are also being considered by the Committee on Procedure. It was decided to set up a small committee to study the recommendations of legal counsel and report to Standards Council.

Because the purpose of the American Standards Association is to determine whether or not a consensus exists on approval of a standard, the Committee on Procedure recommended that "No Voting" ballots not be accepted. However, it was pointed out that some committees, such as the Sectional Committee on Petroleum Products and Lubricants, Z11, are so broad in scope and membership that they act as a forum for discussion of the need for standards rather than as standard-preparing committees. This was considered so important a question that it was referred back to the Committee on Procedure for further consideration.

A careful study has been given to the scope of work of the American Standards Association by a special committee set up last year. The report of the committee, which is to be taken up by ASA's Board of Directors at its meeting in September, will be discussed by the chairman of the special committee in a forthcoming issue of THE MAGAZINE OF STANDARDS.

THE MEMBERS OF ASA — companies, national trade associations, technical societies and public interest groups— are listed in a new 63-page booklet, "Directory of the Members of the American Standards Association." It also names the officers and Board of Directors of the Association, gives state and city governments, colleges and universities, and various individuals affiliated with ASA. Free upon request.

FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering copies of standards, please refer to the number following the title.

621.798 PACKING EQUIPMENT

Finland (SFS)

Fish case with lid SFS Z.II.6

France (AFNOR)

Carboys, protected type for shipment NF H 48002
Designation of different parts of a packing container NF X 41-004
Rolling test of packing containers NF X 41-006
Determination of the degree of grease absorption by the container NF X 41008
Dehydrating chemicals used in packing containers. Terminology NF X 40-002
6 stds for testing dehydrating chemicals for packing containers NF X 41-014/9

624 CIVIL ENGINEERING

France (AFNOR)

Hydraulic binders, general specifications NF P 15-300
Wooden doors NF P 23-301

Germany (DNA)

Pitch of roof of industrial building DIN 18222
Covered platforms DIN 18226

Hungary (MSZH)

7 stds for different type reinforced concrete flooring MNOSZ 15947/53

Norway (NSF)

Limits and fits for the building industry NS 451
Modular dimensioning of bricks, wallboards, etc. General principles NS 452/3
Wooden windows and doors; nomenclature NS 755
Wooden frames for windows and doors NS 756
Wooden French windows and doors, inward opening NS 764 A, bl. 1-3
Wooden windows, horizontally and vertically center hinged NS 767/8
7 stds for different types of interior wooden staircases NS 790/796

Portugal (IGPAI)

3 stds for testing different types of prefabricated flooring NP-53/55

Sweden (SIS)

Door for room ventilation SIS 566610

628 SANITARY ENGINEERING

Mexico (DGN)

Wash tubs of asbestos-cement DGN C 33-1955

United Kingdom (BSI)

Small domestic sewage treatment works (code of practice) CP 302.100 (1956)

628.9 ILLUMINATION

Belgium (IBN)

Code of good practice for street and highway illumination, Supplement to: NBN 354

Bulgaria

10 stds for ship lights, cleats and bollards BDS 1823/7, 1854/6, 1951, 1947

Canada (CSA)

Street and highway lighting C 92.2-1956

United Kingdom (BSI)

Street lighting Part 2. Roads other than traffic routes CP 1004:Part 2:1956
Maintained lighting for cinemas (code of practice) CP 1007:1955

629.11 LAND VEHICLES. TRANSPORT ENGINEERING

Sweden (SIS)

4 stds for tractors and parts SIS 352302/3, 352305, 352307
Bicycle rims, spokes and nipples SMS 1627/9

637 PRODUCE OF DOMESTIC ANIMALS

Germany (DNA)

2 stds for pipe fittings for dairy factories DIN 11852, B1.1, 2

Netherlands (HCNN)

Determination of the percentage of fat in cream by Gerber's method V 2271
Determination of the percentage of fat in cheese by butyrometric method V 3059

651 OFFICE ORGANIZATION AND MANAGEMENT

Belgium (IBN)

Layout of A 4 letter head paper with corresponding window envelopes NBN 336
Layout of letter heads, size A 5 with corresponding window envelope NBN 337
Layout of postcard NBN 338
Instructions for typists NBN 346

655 PRINTING AND PUBLISHING

Germany (DNA)

Rubber blanket for offset printing DIN 16530

Portugal (IGPAI)

Proofreaders' marks NP-61

66 CHEMICAL INDUSTRY

France (AFNOR)

4 stds for chemical analysis of raw pyrites and of ashes of pyrites for the determination of lead-, silicon-, copper- and zinc content NF T 14-004/7

661 CHEMICAL PRODUCTS IN THE NARROWER SENSE

Mexico (DGN)

Zinc sulfate, technical DGN K 45-1955

662.6/.9 FUEL INDUSTRY

Germany (DNA)

Gas water heaters for domestic use DIN 3368
Fuel for tractors DIN 51602
Testing of liquid fuel: determination of monomethylanilin content DIN 51767
Testing of liquid fuels for octane number DIN 51756

Japan (JISC)

Methods for sampling and analysis of coal and coke JIS M 8802 *

666 GLASS AND CERAMIC INDUSTRY

France (AFNOR)

Plain glass carboy NF B 31-018

India (ISI)

Methods for the analysis of glass—Part 1: Recommended procedure for the analysis of glasses of the soda-lime-magnesia-silica type ISI 2649:Part 1:1955

Spain (IRATRA)

Test of lime and limestone for anhydrous sulfur content UNE 7096
Determination of insoluble matter in puzzolaneous cement UNE 7087
Baked clay bricks, quality and sizes UNE 41004
Baked clay tiles UNE 41024
Silico-calcareous bricks UNE 41061
Lime,structural UNE 41066

667.6/.8 PAINTS. VARNISHES. LACQUERS

China (CNS)

10 stds for different ready-mixed paints, enamels, lacquers CNS 601/610(K144/153)

Netherlands (HCNN)

Pigments; antimony white test method N 1942

Sweden (SIS)

Chrome oxide green pigment SIS 160407

672 IRON AND STEEL ARTICLES

Germany (DNA)

2 stds for roller chains DIN 8150, 8152

Japan (JISC)

Steel nibs JIS S 6008
Galvanized iron wire gabion JIS A 5513
Wire netting for paper making JIS H 6101

Poland

3 stds for chains PN M-84540/2

677 TEXTILE INDUSTRY

Finland (SFS)

Direction of twist in textile yarns SFS L.I.1

France (AFNOR)

Determination of textile size changes in laundering in near-boiling water PN G 07-005

Germany (DNA)

Flat knitting machines DIN 60919

India (ISI)

Cotton reinforcing tape for aircraft IS 714-1955
Mercerized cotton fabric, grade 2, for aircraft IS 598-1955
Determination of moisture content in greasy wool IS 743-1955
11 stds for different types of handloom cotton fabrics IS 745/9, 751/6-1955

Mexico (DGN)

Cotton fabric for house dresses DGN A 28-1955
Sport shirts, cotton DGN A 29-1955

Netherlands (HCNN)

Colorfastness of textiles to daylight V 2210

Spain (IRATRA)

Testing of carded ribbon UNE 40001
Yarn testing UNE 40004
Symbols designating spinning machinery UNE 40007
Symbols designating washing and dyeing machinery UNE 40009

United Kingdom (BSI)

Tests for the colour fastness of textiles BS 2661-86:1956
Dimensions of spinning and doubling rings and preferred spindle gauges BS 2707:1956

677.05 TEXTILE MACHINERY

Bulgaria

5 stds for shuttles for different weavings BDS 1865/9

China (CNS)

5 stds for different shuttles CNS 576/580 (L 1/5)
15 stds for bobbins and spools CNS 581/595 (L 6/20)
8 stds for methods of testing bobbins CNS 596 (L 21-1/ -8)

Netherlands (HCNN)

Steel wire healds for looms V 1613

678 RUBBER INDUSTRY

Bulgaria

Method of testing rubber vulcanizers BDS 1071
Cotton reinforced tubes for railway and tramway pneumatic system BDS 1072

India (ISI)

Rubber and insertion jointing IS 638-1955

Japan (JISC)

2 stds for bicycle tires JIS K 6319/20
4 stds for industrial hose for different purposes JIS K 6342/5

United Kingdom (BSI)

Methods of testing vulcanized rubber:
Part A 1. Determination of density and specific gravity BS 903:Part A 1:1956
Part A 2. Determination of tensile stress-strain properties BS 903:Part A 2:1956
Part A 3. Determination of tear strength BS 903:Part A 3:1956
Part A 10. Determination of resistance to flex cracking BS 903:Part A 10:1956
Part A 18. Determination of equilibrium water vapour absorption BS 903:Part A 18:1956
Synthetic resin (phenolic and aminoplastic) adhesives for constructional work in wood BS 1204:1956

681.2 INSTRUMENT MAKING

Germany (DNA)

Household scale DIN 8110

Japan (JISC)

Micrometer JIS B 7508

Sweden (SIS)

8 stds for pressure gages and parts SMS 1642/9

United Kingdom (BSI)

Glossary of terms relating to the performance of measuring instruments BS 2643:1955

69 BUILDING INDUSTRY

India (ISI)

Wood stairs IS 585:1956
Clay lath IS 2705:1956

Israel (SII)

Nomenclature of storeys SI 166

Union of South Africa (SABS)

Wood-fibre building board SABS 540-1955

United Kingdom (BSI)

Concrete plain roofing tiles and fittings BS 473:1956
Asbestos cement rainwater pipes, gutters and fittings BS 569:1956
Mastic asphalt for flooring (limestone aggregate) BS 1076:1956
Sills and lintels (clayware, cast concrete and natural stone) BS 1236-40:1956

697 HEATING AND VENTILATION

Germany (DNA)

Continuous fire iron space heaters DIN 18893

Poland

Iron pipes for central heating PN H-74500

744 TECHNICAL DRAWINGS

Germany (DNA)

Method of folding drawings DIN 824

India (ISI)

Code of practice for general engineering drawings IS 696-1955

Israel (SII)

2 stds for technical drawings SI 162/3

Netherlands (HCNN)

Graphical symbols on drawings for surface finish V 630-D

Portugal (IGPAI)

Different types of lines used in technical drawings NP-62

77 PHOTOGRAPHY

Poland

Tripod connection PN N-84500

Union of South Africa (SABS)

Purchasing specifications for episcopes SABS 507-1955
Purchasing specifications for stripfilm projectors SABS 506-1955

United Kingdom (BSI)

Dimensions of film for airborne cameras BS 2696:1956

NEWS BRIEFS.....

• Milan members of the Italian Quality Control Association will soon be able to use an Italian-language version of the American Standard Control Chart Method of Controlling Quality During Production, Z1.3-1942. The American Standards Association has just authorized the Milan Section of the Association to translate the standard for the use of its members.

• The Society of the Plastics Industry is now a member of the Chemical Industry Advisory Board. The Society has named Harry Zimmerman, Seiberling Rubber Company, as its representative.

• Following authorization by the Materials and Testing Standards Board, the American Standards Association has requested participating status in the international project on Refractories, ISO/TC 33. Committee C-8 of the American Society for Testing Materials has been designated the American Advisory Group to ASA in connection with this international committee.

• A new technical committee to develop international recommendations on gymnastics and sports equipment is being organized by the International Organization for Standardization. The committee will be known as ISO/TC 83 and the national standards body of Germany will hold the secretariat.

• A revolution in institutional textile purchasing methods may well be contained in a new book called *Hotel Textile Purchasing Guide*, released by the American Hotel Association, according to recent reports by textile publications.

The *Guide* shows in specific terms how the hotel and institutional purchaser may be assured of quality performance in textile purchases. Such purchases amount to more than $100,000,000 a year, covering sheets, pillowcases, blankets, uniforms, and similar textile products. The *Guide* uses the newly-developed American Standards L.24, Minimum Performance Requirements for Institutional Textiles, which represent a consensus of the technical know-how and trade experience of nearly 40 manufacturers, suppliers, consumers, and technical organizations in the institutional field.

• Representatives of 20 nations attending the textile meetings of the International Organization for Standardization, at Southport, England, voted May 17 on a universal system for expressing yarn count.

The word "Tex," which indicates the yarn weight in grams per 1000 meters, should be used exclusively by their technologists, the representatives agreed. The group now expects this system to displace the multiplicity of yarn numbering systems now used in each country.

This action was supported by representatives of the International Wool Textile Organization, International Linen and Hemp Confederation, and BISFA (International Bureau for Standardizing Synthetic Fibers).

The 17 United States delegates attending the meetings were nominated by various organizations to represent the American Standards Association, USA member of the 37-country Organization, at the meetings of ISO Technical Committee 38 on Textiles, held May 11-18.

The committee is divided into working groups on colorfastness testing, shrinkage of fabrics in washing, systematic reduction of the number of cloth widths, yarn testing, fiber testing, and ropes and cordage.

William D. Appel, chief, Textiles Section, Organic & Fibrous Materials Division, National Bureau of Standards, was leader of the United States delegation.

Other members of the delegation included T. L. W. Bailey, Jr, U.S. Department of Agriculture; Dr Earl E. Berkley, Anderson, Clayton & Company, Houston, Texas; George S. Buck, Jr, National Cotton Council of America, Washington, D.C.; Louis A. Fiori, U.S. Department of Agriculture; Otto Goedecke, Otto Goedecke Corporation, Hallettsville, Texas; Joel F. Hembree, University of Texas; Dr Kenneth L. Hertel, University of Tennessee's Agricultural Experiment Station, Knoxville; Professor William A. Newell, North Carolina State College, Raleigh; Edward T. Pickard, Kent, Conn; Dr Arthur G. Scroggie, E. I. du Pont de Nemours and Company, Inc, Wilmington, Del; A. L. Vandergriff, Lummus Cotton Gin Company, Columbus, Georgia; Professor Benjamin L. Whittier, North Carolina State College, Raleigh; William L. Wilt, The Sheffield Corporation, Dayton, Ohio; Dr. John W. Wright, U.S. Department of Agriculture; Lt Col Carl L. Whitney, Department of the Army, Quartermaster Research and Development Command, Natick, Mass. C. E. Hilton, American Standards Association, was secretary of the delegation.

The national standards bodies of the following countries are members of the committee on textiles: Australia, Belgium, Brazil, Canada, Czechoslovakia, Denmark, France, Germany, India, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Union of South Africa, United Kingdom, United States and Russia.

AMERICAN STANDARDS UNDER WAY

Status as of June 29, 1956

Legend

Standards Council—Approval of Standards Council is final approval as American Standard; usually requires 4 weeks.

Board of Review—Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks.

Standards Boards—Approve standards to send to Standards Council or Board of Review for final action; approval by standards boards usually takes 4 weeks.

BUILDING AND CONSTRUCTION

American Standard Published—

Rolled Copper-Alloy Bearing and Expansion Plates and Sheets for Bridge and Other Structural Uses, (Revision of ASTM B 100-54; ASA H31.1-1954) ASTM B 100-55; ASA H31.1-1956 $0.30

Requirements covering rolled copper-alloy plates and sheets for use in bridges and other structures for fixed or expansion bearings where motion is slow and intermittent and pressure does not exceed 3000 psi. A phosphor bronze alloy designated as alloy No. 1 and a copper-silicon alloy designated as alloy No. 2 are covered by this specification.

Sponsor: American Society for Testing Materials

In Board of Review—

Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units (Revision of ASTM C 126-52T; ASA A101.1-1954) ASTM C 126-55T; ASA A101.1

Sponsor: American Society for Testing Materials

In Standards Board—

Billet-Steel Bars for Concrete Reinforcement, ASTM A 15-54T; ASA A50.1 (Revision of ASTM A 15-39; ASA A50.1-1939)

Rail-Steel Bars for Concrete Reinforcement, Specifications for, ASTM A 16-54T; ASA A50.2 (Revision of ASTM A 16-35; ASA A50.2-1936)

Structural Rivet Steel, Specifications for, ASTM A 141-55; ASA G21.1

Steel for Bridges and Building, Specifications for, ASTM A 7-55T; ASA G24.1

Structural Silicon Steel, Specifications for, ASTM A 94-54; ASA G41.1

High-Strength Structural Rivet Steel, Specifications for, ASTM A 195-52 T; ASA G42.1

Axle-Steel Bars for Concrete Reinforcement, Specifications for, ASTM A 160-54T; ASA G43.1

High-Strength Steel Castings for Structural Purposes, Specifications for, ASTM A 148-55; ASA G52.1

Sponsor: American Society for Testing Materials

CONSUMER GOODS

In Standards Board—

Milled Toilet Soap, Specifications for (Revision of ASTM D 455-53T; ASA K60.6-1954)

Sponsor: American Society for Testing Materials

Withdrawal Being Considered—

Code for Testing Domestic Refrigerators Using Ice, ASA B38c1-1931

Sponsor: American Society of Refrigerating Engineers

ELECTRIC AND ELECTRONIC

American Standards Published—

Single and Heavy Vinyl Acetal-Coated Round Copper Magnet Wire, NEMA MW15-1955; ASA C9.5-1955 $0.75

Heavy Vinyl Acetal-Coated Rectangular and Square Copper Magnet Wire, NEMA MW18-1955; ASA C9.6-1955 $0.50

Double-Paper Single-Cotton Covered Rectangular and Square Copper Magnet Wire, NEMA MW32-1955; ASA C9.7-1955 $0.50

Sponsor: National Electrical Manufacturers Association

Transformer-Type Arc-Welding Machines, Standards for Safety, UL 551; ASA C33.2-1956 $0.75

Sponsor: Underwriters' Laboratories

Brushes for Electrical Machines, Requirements for, NEMA CB1-1956; ASA C64.1-1956 $2.00

Sponsor: National Electrical Manufacturers Association

Fluorescent Lamp Starters, Specifications for, ASA C78.180-1956

Fluorescent Lamp Starters, Method of Testing, ASA C78.181-1956 $0.50

Designation of Photo Lamps, Code for the, ASA C78.370-1956 $0.50

Sponsor: Elecrical Standards Board

American Standard Approved—

Cotton Braid for Insulated Wire and Cable for General Purposes, Specifications for, (Revision of ASA C8.12-1942) ASA C8.12-1956

Sponsor: Electrical Standards Board

In Board of Review—

Bronze Trolley Wire, Specifications for, ASTM B 9-55; ASA C7.5 (Revision of ASA C7.5-1953)

Copper Trolley Wire, Specifications for, ASTM B 47-55; ASA C7.6 (Revision of ASA C7.6-1953)

Soft Rectangular and Square Bare Copper Wire for Electrical Conductors, Specifications for, ASTM B 48-55; ASA C7.9 (Revision of ASA C7.9-1953)

Hard-Drawn Copper Alloy Wires for Electrical Conductors, Specifications for, ASTM B 105-55; ASA C7.10 (Revision of ASA C7.10-1953)

Figure-9 Deep-Section Grooved and Figure-8 Copper Trolley Wire for Industrial Haulage, Specifications for, ASTM B 116-55; ASA C7.11 (Revision of ASA C7.11-1953)

Hard-Drawn Aluminum Wire for Electrical Purposes, Specifications for, ASTM B 230-55T; ASA C7.20 (Revision of ASA C7.20-1953)

Concentric-Lay-Stranded Aluminum Conductors, Hard-Drawn and Three Quarter Hard-Drawn, Specifications for, ASTM B 231-55; ASA C7.21 (Revision of ASA C7.21-1953)

Concentric-Lay-Stranded Aluminum Conductors, Steel-Reinforced, Specifications for, ASTM B 232-55T; ASA C7.22 (Revision of ASA C7.22-1953)

Rolled Aluminum Rods (EC Grade) for Electrical Purposes, Specifications for, ASTM B 233-55; ASA C7.23 (Revision of ASA C7.23-1953)

Standard Weight Zinc-Coated (Galvanized) Steel Core Wire for Aluminum Conductors, Steel Reinforced (ACSR), Specifications for, ASTM B 245-55; ASA C7.28 (Revision of ASA C7.28-1953)

Zinc-Coated (Galvanized) Steel Core Wire (With Coatings Heavier than Standard Weight) for Aluminum Conductors, Steel Reinforced (ACSR), Specifications for, ASTM B 261-55; ASA C7.34

Three-Quarter Hard Aluminum Wire for Electrical Purposes, Specifications for, ASTM B 262-55; ASA C7.35

Standard Nominal Diameters and Cross-Sectional Areas of AWG Sizes of Solid Round Wires Used as Electrical Conductors, Specifiactions for, ASTM B 258-51T; ASA C7.36

In Standards Board—

Distribution, Power, and Regulating Transformers, and Reactors other than Current-Limiting Reactors (Revision of ASA C57.12-1954)

Requirements for Transformers, 67,000 Volts and Below; 501 through 10,000 Kva, 3-Phase; 501 through 5,000 Kva, 1 Phase (Revision of ASA C57.12a-1954)

Test Code for Distribution, Power, and Regulating Transformers (Revision of ASA C57.22-1948)

Sponsor: Electrical Standards Board

Vulcanized Fiber Sheets, Rods and Tubes Used for Electrical Insulation, Specifications for, ASTM D710-54T; ASA C59.29

Laminated Thermosetting Materials, Specifications for (Revision of NEMA LP1-1951; ASA C59.16-1952) ASTM D709.55T; NEMA LP1-1955; ASA C59.16

Sponsor: American Society for Testing Materials

Definitions of Semiconductor Terms, ASA C60.14; IRE 7.S2

Sponsor: Joint Electron Tube Engineering Council

A-25 Bulb, Medium Screw Base, Incandescent Lamps, C78.252

A-23 Bulb, Medium Screw Base, Incandescent Lamps (Overall Length, maximum 6-5/16 in., minimum 5-7/8 in.), C78.253

General Service Incandescent Lamps for 115-, 120-, and 125-volt Circuits, C78.100 (Revision of C78.100-1953)

Miniature Incandescent Lamps, C78.140 (Revision of C78.140-1954)

Sponsor: Electrical Standards Board

Reaffirmation Approved—

Rope-Lay-Stranded Copper Conductors Having Bunch-Stranded Members, for Electrical Conductors, Specifications for, ASTM B 172-55; ASA C7.12-1953 R 1956

Rope-Lay-Stranded Copper Conductors Having Concentric-Stranded Members for Electrical Conductors, Specifications for, ASTM B 173-55; ASA C7.13-1953 R 1956

Bunch-Stranded Copper Conductors for Elecrical Conductors, Specifications for, ASTM B 174-55; ASA C7.14-1953 R 1956

Sponsor: American Society for Testing Materials

The ASTM status of these standards has changed from tentative to standard with a consequent change in the year designation, but with no change in substance.

MATERIALS AND TESTING

American Standards Published—

Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles, Methods of Test for, ASTM A 90-53; ASA G8.12-1956 $0.30

Zinc Coating (Hot-Dip) on Iron and Steel Hardware, Specifications for, ASTM A 153-53; ASA G8.14-1956 $0.30

Sponsor: American Society for Testing Materials

Wool Content of Raw Wool (Laboratory Scale), Tentative Methods of Test for, ASTM D 584-54T, ASA L14.40-1956 $0.30

Sponsors: American Association of Textile Chemists and Colorists; American Society for Testing Materials

In Standards Board—

Electrodeposited Coatings of Zinc on Steel, Specifications for, ASTM A 164-55; ASA G53.1

Electrodeposited Coatings of Cadmium on Steel, Specifications for, ASTM A 165-55; ASA G53.2

Electrodeposited Coatings of Nickel and Chromium on Steel, Specifications for, ASTM A 166-55T; ASA G53.3

Electrodeposited Coatings of Nickel and Chromium on Copper and Copper-Base Alloys, Specifications for, ASTM B 141-55; ASA G53.4

Electrodeposited Coatings of Nickel and Chromium on Zinc and Zinc-Base Alloys, Specifications for, ASTM B 142-55; ASA G53.5

Chromium Plating on Steel for Engineering Use, Recommended Practice for, ASTM B 177-55; ASA G53.6

Preparation of Low-Carbon Steel for Electroplating, Recommended Practice for, ASTM B 183-49; ASA G53.7

Electrodeposited Coatings of Lead on Steel, Specifications for, ASTM B 200-55T; ASA G53.8

Chromate Finishes on Electrodeposited Zinc, Hot-Dipped Galvanized, and Zinc Die-Cast Surfaces, Specifications for, ASTM B 201-55T; ASA G53.9

Preparation of High-Carbon Steel for Electroplating, Recommended Practice for, ASTM B 242-54; ASA G53.10

Preparation of Zinc-Base Die Castings for Electroplating, Recommended Practice for, ASTM B 252-53; ASA G53.11

Preparation of and Electroplating on Aluminum Alloys, Recommended Practice for, ASTM B 253-53; ASA G53.12

Preparation of and Electroplating on Stainless Steel, Recommended Practice for, ASTM B 254-53; ASA G53.13

Preparation of Copper and Copper-Base Alloys for Electroplating, Recommended Practice for, ASTM B 281-53T; ASA G53.14

Sponsor: American Society for Testing Materials

Withdrawal Being Considered—

Zinc-Coated Iron or Steel Chain-Link Fence Fabric Galvanized After Weaving, Specifications for, ASTM A 117-33; ASA G8.5-1935

Carbon-Steel and Alloy-Steel Blooms, Billets and Slabs for Forgings, Specifications for, ASTM A 17-29; ASA G9.1-1933

Refined Iron Bars, Specifications for, ASTM A 41-36; ASA G12-1936

Alloy-Steel Bolting Material for High-Temperature Service, Specifications for, ASTM A 96-44; ASA G17.2-1944

Mild Steel Plates, Specifications for, ASTM A 10-39; ASA G20-1939

Carbon-Steel Castings Suitable for Fusion Welding for Miscellaneous Industrial Uses, Specifications for, ASTM A 215-44; ASA G51.1-1944

Chemical Analysis of Alloys of Lead, Tin, Antimony, and Copper, Methods of, ASTM B 18-36T; ASA K5-1922

Battery Assay of Copper, Method of, ASTM B 34-36T; ASA K12-1921.

Sampling Coal for Analysis, Method of, ASTM D 21-40; ASA K46-1940

Test for Alkalinity or Acidity of Pigments, Method of, ASTM D 278-31; ASA K51-1941

Sponsor: American Society for Testing Materials

MECHANICAL

In Board of Review—

Design for Fine-Pitch Worm Gearing (Revision of AGMA 374.02; ASA B6.9-1950)

Sponsors: American Gear Manufacturers Association; The American Society of Mechanical Engineers

Boiler Rivet Steel and Rivets, Specifications for, ASTM A 31-55; ASA G28.1

Carbon-Silicon Steel Plates of Intermediate Tensile Ranges for Fusion-Welded Boilers and Other Pressure Vessels, Specifications for, ASTM A 201-54T; ASA G31.1

Chromium - Manganese - Silicon (CMS) Alloy-Steel Plates for Boilers and Other Pressure Vessels, Specifications for, ASTM A 202-54T; ASA G32.1

Nickel-Steel Plates for Boilers and Other Pressure Vessels, Specifications for, ASTM A 203-54T; ASA G33.1

Molybdenum-Steel Plates for Boilers and Other Pressure Vessels, Specifications for, ASTM A 204-54T; ASA G34.1

High Tensile Strength Carbon-Silicon Steel Plates for Boilers and Other Pressure Vessels, Specifications for, ASTM A 212-52aT; ASA G35.1

Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service, Specifications for, ASTM A 182-55T; ASA G37.1

Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service, Specifications for, ASTM A 194-55T; ASA G38.1

Forged or Rolled Steel Pipe Flanges, Forged Fittings, and Valves and Parts for General Service, Specifications for, ASTM A 181-55T; ASA G46.1

Sponsor: American Society for Testing Materials

In Standards Board—

Life Tests for Single-Point Tools of Sintered Carbide, B5.34

Sponsors: American Society of Mechanical Engineers; American Society of Tool Engineers; Metal Cutting Tool Institute; National Machine Tool Builders' Association; Society of Automotive Engineers

Conveyor Terms and Definitions, B75

Sponsor: Conveyor Equipment Manufacturers Association

Project Being Considered—

Industrial Cooling Towers

MINING

Withdrawal Being Considered—

Sampling Coal for Analysis, Method of, ASTM D 21-40; ASA K46-1940

Sponsor: American Society for Testing Materials

PHOTOGRAPHY

American Standards Published—

Medical X-ray Sheet Film (Inch and Centimeter Sizes), Dimensions for, (Revision of ASA PH1.17-1953) ASA PH1.17-1956 $0.25

Covers dimensions and tolerances for medical x-ray sheet film for both inch and centimeter sizes. Requirements for squareness are also given.

Professional Portrait and Commercial Sheet Film (Inch and Centimeter Sizes), Dimensions for, (Revision of ASA PH1.18-1953 and ASA Z38.1.29-1949) ASA PH1.18-1956 $0.25

Covers dimensions and tolerances for professional portrait and commercial sheet film for both inch and centimeter sizes. Requirements for squareness are also given.

70-Millimeter Unperforated and Perforated Film for Cameras Other Than Motion Picture Cameras, Dimensions for, (Revision of Z38.1.3-1948) PH1.20-1956 $0.25

Covers the dimensions of unperforated, and two types of perforated, 70mm films for aerial, still, ground, and recording cameras. The films are not intended for use in cinematography.

Amateur Roll Film, Backing Paper and Film Spool No. 828, Dimensions for, PH1.21a-1956 (Supplement to ASA Z38.1.7-1950) $0.25

Covers the dimensions and tolerances in both the inch and metric systems for the film and backing paper on which the film is mounted on the spool on which these are wound. The dimensions given apply to the film spooled for non-automatic cameras.

Safety Photographic Film, Specifications for, PH1.25-1956 (Revision of ASA Z38.3.1-1943) $0.50

Gives directions for conducting ignition and burning time tests for both processed and unprocessed film and alternative methods for removing emulsion layers prior to determining nitrogen content.

Sponsor: Photographic Standards Board

American Standard Approved—

Definition of a Fine Grain Developer, ASA PH4.14-1956

Sponsor: Photographic Standards Board

Provides a method for evaluating the performance of a developer in comparison with the reference developer with respect to graininess pattern. It applies to black-and-white continuous-tone still photography where the result is normally viewed as a reflection print.

In Board of Review—

Determining the Activity or the Relative Photographic Effectiveness of Illuminants, Method for, ASA PH2.3 (Revision of PH2.3-1953)

Sponsor: Photographic Standards Board

PIPE AND FITTINGS

In Standards Board—

Welded and Seamless Steel Pipe, Specifications for (Revision of ASTM A53-47; ASA B36.1-1950) ASTM A53-55T; ASA B36.1

Welded Wrought-Iron Pipe, Specifications for (Revision of ASTM A72-45; ASA B36.2-1950) ASTM A72-55; ASA B36.2

Seamless Carbon-Steel Pipe for High-Temperature Service, Specifications for (Revision of ASTM A106-48T; ASA B36.3-1950) ASTM A106-55T; ASA B36.3

Electric-Fusion (Arc)-Welded Steel Plate Pipe, Sizes 16 in. and over, Specifications for [Revision of Electric-Fusion-Welded Steel Pipe (Sizes 30 in. and over) ASTM A134-42; ASA B36.4-1942] ASTM A134-54; ASA B36.4

Electric-Resistance-Welded Steel Pipe, Specifications for (Revision of ASTM A135-46; ASA B36.5-1950) ASTM A135-55T; ASA B36.5

Electric-Fusion-Welded Steel Pipe for High-Temperature Service. (Revision of Electric-Fusion-Welded Steel Pipe for High Temperature and High-Pressure Service, ASTM A155-42; ASA B36.11-1942 ASTM A155-55T; ASA B36.11

Electric-Fusion (Arc)-Welded Steel Pipe, (Sizes 4 in. and over) [Revision of Electric-Fusion-Welded Steel Pipe (Sizes 4 in. to but not including 30 in.) ASTM A139-46; ASA B36.9-1950] ASTM A139-55; ASA B36.9

Seamless Steel Boiler Tubes, Specifications for (Revision of Lap-Welded and Seamless Steel and Lap-Welded Iron Boiler Tubes, ASTM A83-44; ASA B36.12-1945) ASTM A83-55T; ASA B36.12

Electric-Resistance-Welded Steel and Open-Hearth Iron Boiler Tubes, Specifications for (Revision of ASTM A178-44; ASA B36.13-1945) ASTM A178-55T; ASA B36.13

Seamless Steel Boiler Tubes for High-Pressure Service, Specifications for (Revision of ASTM A192-44; ASA B36.14-1945) ASTM A192-55T; ASA B36.14

Medium-Carbon Seamless Steel Boiler and Superheater Tubes, Specifications for (Revision of ASTM A210-44; ASA B36.15-1945) ASTM A 210-55 T; ASA B36.15

Spiral-Welded Steel or Iron Pipe, Specifications for (Revision of ASTM A211-44; ASA B36.16-1945) ASTM A 211-54; ASA B36.16

Seamless Alloy-Steel Boiler, Superheater, and Heat Exchanger Tubes, Specifications for (Revision of Seamless Alloy-Steel Boiler and Superheater Tubes, ASTM A213-44; ASA B36.17-1945) ASTM A 213-55 T; ASA B36.17

Electric-Resistance-Welded Steel Boiler and Superheater Tubes for High-Pressure Service, Specifications for (Revision of ASTM A 226-44; ASA B36.18-1945) ASTM A 226-55T; ASA B36.18

Welded and Seamless Open-Hearth Iron Pipe, Specifications for (Revision of Welded-Alloyed Open-Hearth Iron Pipe, ASTM A 253-47; ASA B36.23-1950) ASTM A 253-55T; ASA B36.23

Seamless and Welded Austenitic Stainless Steel Pipe, Specifications for (Revision of ASTM A 312-48T; ASA B36.26-1950) ASTM A 312-55 T; ASA B36.26

Seamless Alloy-Steel Pipe for High-Temperature Service, Specifications for (Revision of ASTM A158-49T; ASA B36.21-1950)

Seamless Carbon-Molybdenum Alloy-Steel Pipe for High-Temperature Service, Specifications for (Revision of ASTM A 206-48T; ASA B36.22-1950)

Seamless Chromium-Molybdenum Alloy-Steel Pipe for Service at High Temperatures (Revision of ASTM A280-48T; ASA B36.24-1950)

Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service, Specifications for (Revision of Seamless 1 Percent Chromium, 0.5 Percent Molybdenum Alloy-Steel Pipe for Service at High Temperatures, ASTM A 315-48T; ASA B36.25-1950) ASTM A 335-55T; ASA B36.42

Seamless Low-Carbon and Carbon-Molybdenum Steel Still Tubes for Refinery Service, Specifications for, ASTM A 161-55T; ASA B36.27

Seamless Cold-Drawn Low-Carbon Steel Heat-Exchanger and Condenser Tubes, Specifications for, ASTM A 179-55T; ASA B36.28

Seamless Cold-Drawn Intermediate Alloy-Steel Heat-Exchanger and Condenser Tubes, Specifications for, ASTM A 199-55T; ASA B36.29

Seamless Intermediate Alloy-Steel Still Tubes for Refinery Service, Specifications for, ASTM A200-55T; ASA B36.30

Seamless Carbon-Molybdenum Alloy-Steel Boiler and Superheater Tubes, Specifications for, ASTM A 209-55T; ASA B36.31

Electric-Resistance-Welded Steel Heat-Exchanger and Condenser Tubes, Specifications for, ASTM A 214-55T; ASA B36.32

Welded Austenitic Stainless Steel Boiler, Superheater, Heat Exchanger and Condenser Tubes, Specifications for, ASTM A 249-55T; ASA B36.33

Electric-Resistance-Welded Carbon-Molybdenum Alloy-Steel Boiler and Superheater Tubes, Specifications for, ASTM A 250-55T; ASA B36.34

Copper Brazed Steel Tubing, Specifications for, ASTM A 254-55T; ASA B36.35

Seamless and Welded Ferritic Stainless Steel Tubing for General Service, Specifications for, ASTM A 268-55; ASA B36.36

Seamless and Welded Austenitic Stainless Steel Tubing for General Service, Specifications for, ASTM A 269-55; ASA B36.37

Seamless and Welded Austenitic Stainless Steel Sanitary Tubing, Specifications for, ASTM A 270-55; ASA B 36.38

Seamless Austenitic Chromium-Nickel Steel Still Tubes for Refinery Service, Specifications for, ASTM A 271-55; ASA B36.39

Seamless and Welded Steel Pipe for Low-Temperature Service, Specifications for, ASTM A 333-55T; ASA B36.40

Seamless and Welded Steel Tubes for Low-Temperature Service, Specifications for, ASTM A 334-55T; ASA B36.41

WHAT'S NEW ON AMERICAN STANDARDS PROJECTS

Installation of Ceramic Tile, A108—

Sponsor: Tile Council of America

Organization of a sectional committee for this project is under way. Drafts of four specifications are being published by the sponsor as proposed American Standards for study by the new committee.

American Standard

Electrical Indicating Instruments

Panel, Switchboard, and Portable Instruments

ASA
Reg. U. S. Pat. Off.
C39.1-1955
UDC 621.317.7

Erratum

On plates 2, 30, 31, 32, and 33 (pages 16, 44, 45, 46, 47, respectively), the requirements for leakage current should be changed to read:

REQUIREMENTS

1.0 milliampere max when measured at 800 volts or 0.2 milliampere max at 120 volts

May 29, 1956

Standardization of Pallets, B69—

Sponsors: Society of Industrial Packaging and Materials Handling Engineers; American Society of Mechanical Engineers

F. H. Wiley, Materials Handling Research Engineer, International Harvester Company, Chicago, is chairman of the new sectional committee on standardization of pallets. V. J. Reade, Whitehead Metal Products Company, New York, is vice-chairman; and C. J. Carney, Jr, Managing Director, Society of Industrial Packaging and Materials Handling Engineers, Chicago, is secretary.

Since the work of the committee cuts across industry, the 60-odd members of the committee represent a large variety of organizations. In addition, individual experts are included as members-at-large.

Five subcommittees have been appointed and have already held a number of meetings. They are:

Definitions—R. W. Mallick, Westinghouse Electric Corporation, chairman; Glen Johnson, Clark Equipment Company, Battle Creek, Michigan, vice-chairman.

Surveys—Charles H. Pearce, Container and Packaging Division, Department of Commerce, chairman; William H. Sardo, Jr, National Wooden Pallet Manufacturers Association, vice-chairman

Material—H. E. Waters, Freight Loading and Container Bureau, Freight Loss and Damage Prevention Section, Association of American Railroads, chairman; C. R. Gustafson, American Radiator and Standard Sanitary Corporation, vice-chairman

Testing—Chester J. Heinrich, Supply Research and Development Division, Naval Supply Depot, Bayonne, N. J., chairman; Allyn C. Beardsell, Container Laboratories, Inc, New York, N.Y., vice-chairman

Sizes—Don Horton, American Warehousemen's Association, Chicago, Ill, chairman; John Mount, Insurance Company of North America, Philadelphia, Pa., vice-chairman

Ophthalmic Lenses, Z80—

A sectional committee is to be organized for development of standards for opthalmic lenses to work under a scope defined as: "Terminology, definitions, and specifications, including methods of test, for ophthalmic lenses." The Optical Manufacturers Association is being asked to serve as sponsor.

Standards Outlook

by Leo B. Moore

Standards Library

The time seems rapidly approaching for every standards group to have a standards library. This should be a library in the real sense of being a resource, not simply a depository of a collection of printed material. The standardization field needs more good writing, and nothing encourages people with ideas to put their thoughts into print like knowing what has already been published. The compilation, organization, and working knowledge of the printed record associated with standardization will do much to raise the sights of any company standards group.

Most standards departments do have what is designated as their library. Typically, this consists of their working material and their historical accumulation of standards. Technical reference books are the principal items, along with the company manuals. Usually, there is also an assortment of industry, association, and technical society standards, together with those from other companies. Even American standards, and the standards from the leading groups, such as NEMA, ASTM, NFDA, and many others seem, to have been gathered as needed and then have been left untouched and often unidentified. Far outweighing all of these in sheer numbers are the vendors' catalogs which in their miscellaneous hues and dimensions decorate in boundless profusion the average standards office.

What is needed here is the service of a good librarian; first, to organize the chaos and confusion by making the material readily and easily available; and second, to broaden the base of the operation by providing an up-to-date information service to the standards group. The indexing and organizing phases of library activity are well known and understood, but that portion of greatest value for the future is the informational contribution that such a function can provide. The diligent search for newspaper clippings and magazine articles having an impact on any aspect of standardization, and the acquisition of magazines, pamphlets, and books directly related to the field are of prime interest. Every librarian knows that such material has a time value in the sense that it is written in the context of present events, and should be read in the course of these events. This means that the library must be organized to distribute the material speedily to the persons who may gain the most from its perusal, with a brief annotation on lengthy material to make it more valuable and interesting. Since even books are difficult to acquire as time goes by, the decision to place material in the library permanently must be made when it is readily available. In the same way, the proper binding of material when fresh and new will preserve it properly for future reference.

It may not be economically feasible to install a full-fledged standards library at once, but turning for part-time help to the personnel of an existing library in the company is one way to begin.

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Mr Moore is Assistant Professor of Industrial Management at Massachusetts Institute of Technology where he teaches a full-term course in industrial standardization.

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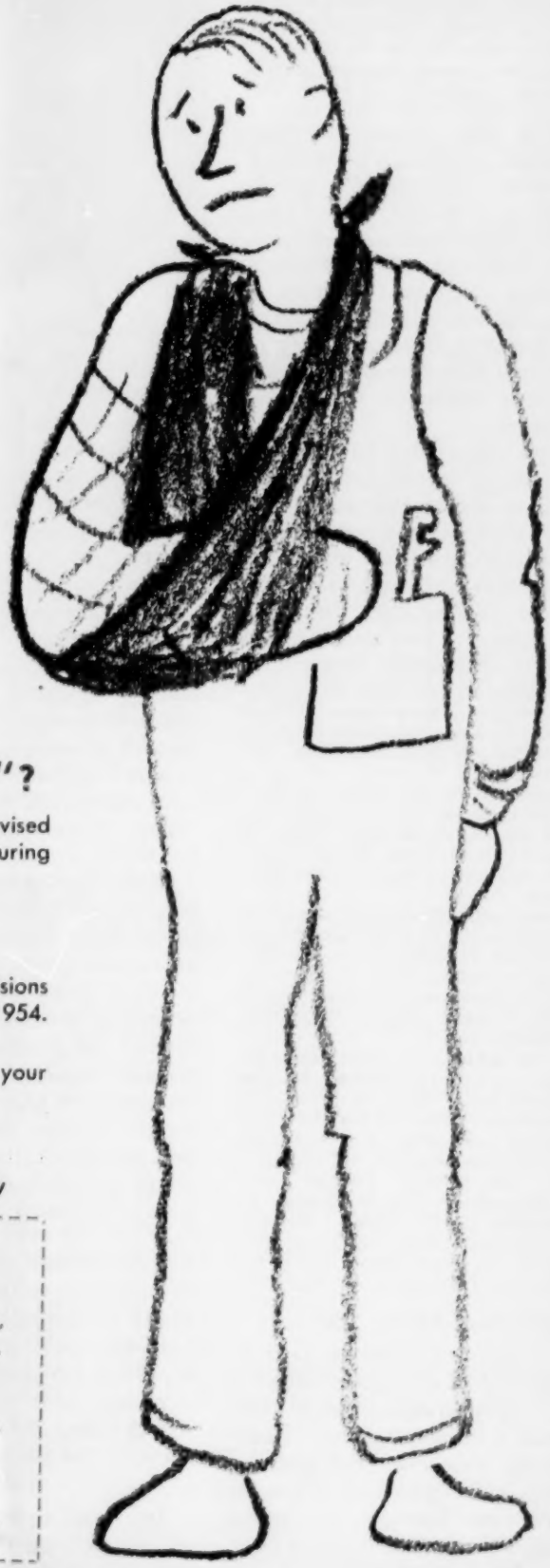
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